Incentives and Management in British Industry

By

R. P. LYNTON

"... the nineteenth century, and still more the twentieth, can knock the fifteenth into a cocked hat in point of susceptibility to marvels and miracles and saints and prophets and magicians and monsters and fairy tales of all kinds."
G. B. SHAW—Introduction to *Saint Joan.*

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To
HERMANN LEVY
and
DONALD TYERMAN
for unfailing encouragement
and help

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PREFACE

This study was conceived on the factory floor, where for the last three years or so of the war the author operated a machine. The main impression was that of waste—waste of materials, of space, of time; but waste, above all, of human qualities, of effort, of good will, of capacity for co-operative venture. And the second impression was this: that quite minor deeds and omissions on the part of management could have mobilised these qualities, indeed, that often no different steps than were in fact taken would have mobilised them if only there had been a different attitude about the whole business. Subsequent wider experience "in the field" confirmed these points and unrelentingly drew attention to the wide variations that existed in British industry and industries in the efficiency of administration.

A number of conclusions followed: given these variations, it was obviously quite inadequate to ascribe the failure of efforts to evoke the workers' co-operation to national factors, such as the level of income tax, the shortage of consumer goods, or the virtual absence of unemployment. What national factors could do, and did do, was to widen the scope for management to substitute, for useful introspection, a deadening inclination to blame exterior forces for administrative failure. And in this they were aided, for instance, by the fashionable international comparisons of productivity and by a number of the Government's activities. Again, the flood of conflicting observations and opinions disseminated over the last few years on the subject of incentives was probably indicative less of the gaps in knowledge in this field than of the fact that incentives could to only a very limited extent be usefully examined on their own: any success or failure depended on the work situation as a whole.

The gaps of knowledge remain. Some of them can be bridged by making explicit the patterns of administrative action that are second nature to successful management. Others will remain until, by the use of the usual scientific methods, there are evolved structures of ever finer hypotheses and conclusions. The material of the present study cannot therefore be anything other than patchy. The virtually complete reliance on English sources may have made it even more scanty than it need have been: it seemed worth taking this risk in order to ensure that the material would not be dismissed as irrelevant and would conduce to a greater emphasis on introspection in British industry. In addition there are, no doubt, many inadequacies which reflect nothing but those of the author.

E. F. L. Brech, O. W. Roskill and Elizabeth Loudon were good enough to read the first draft: it is largely due to them that its successor is a great deal better. My colleagues of the Field Research Group of the British Institute of Management made many helpful suggestions at the last stages. I was able to implement only a few of them: by the time we came together the study was long past real remedy. A more general debt I am able to acknowledge in the dedication.

R. P. LYNTON.

London, 1948.

PART I

Problems of Adjustment

CHAPTER I

THE NEMESIS OF 'INCENTIVES'

> "Nothing takes longer to live down than a prolonged period of ease."
>
> GOETHE.

Management's assessment of the scope of incentives — their real scope in industry — the social consequences of paying no heed to it — the absence of spirit and method of inquiry.

WASTE is natural, even if not excusable, in times of plenty. It cannot be condoned in leaner years. But habits change slowly, and wasteful habits most slowly of all. The longer they persist, the less amenable to change they become. And once they have been dominant for some decades, when their emergence lies beyond the reach of the memories of the present generations, so that their existence as also their effects are taken absolutely for granted—when they are regarded as belonging to 'the order of things'—only strong and sustained external pressure stands any chance of dislodging them. No longer is waste regarded for what it is; or, even if so regarded, it is defended as the inevitable corollary of the attainment of certain ends. At best, the need to eliminate it is eventually put beyond question, and the central problem becomes how.

The waste of human qualities in industry is, one may dare to hope, about to reach this latter stage. The frenzied search for new incentives bears adequate witness to the bankruptcy of the old, at any rate when applied to conditions in post-war Britain. Few stones are being left unturned. Anything is tried, in the name of incentives, that might conceivably, by some stretch of imagination, contribute yet another method of humouring or nagging or cajoling or compelling or even enabling the worker to do more work. Factories are painted and canteens installed, sports grounds acquired and training schemes begun; in the same cause workers have periodically to glower across a table at management, and foremen are taught to smile. All sorts of people outside the factories and mines have all sorts of advice to offer—to raise the food rations, to send nylons to mining areas and miners to football finals, to discuss or, alternatively, not to discuss business matters with employees, to start or not to start additional pension funds, and to pension by result. Incentive or no incentive, that is the question; and the chorus invariably answers in the affirmative. All notations have gone by the board long since; and, in the general confusion, it is not noticed that the same things are said over and over again. Methods for increasing the capacity of the worker are confused with others for strengthening his will, incentive methods with measures to improve general morale: 'incentives' cover them all. From all this only one result is clear: that the term 'incentive' has acquired so many meanings that it has become meaningless.

In so far as it emphasises that problems of human motivation are more profound and complex than has yet been recognised, this loss of precision may be a blessing in disguise. But it is only the disguise that is obvious to all; that it is a disguise for something significant remains to be discovered. This is ignored, for example, on the grounds that it hides nothing but surface phenomena: they will change and the urge will disappear. Thus the search for permanent solutions to a lasting problem, genuine if ill-directed, is diluted and hampered by the efforts of those who look merely for temporary plasters for temporary wounds. The wounds will heal: they were caused by external troubles; they will disappear together; and the plasters can be removed.

It is certainly true that the simultaneous occurrence of a most pressing need for increased production and of shortages of all descriptions, to mention only those of capital goods and time, have opened the wounds wide and made treatment desperately urgent. To estimate the likely duration and strength of these factors would, however, only confuse the issue, and they are here simply ignored: for human qualities were already wasted on a prodigious scale when shortages of this type did not obtain. *Pace* the many who feel nostalgia for 'the good old days', industry should already, long before the war, have acknowledged that no measures of its devising induced the workers to make their maximum contribution to production. In how far their contribution fell short of capacity will be indicated presently. First industry's attitude towards the facts should be considered.

Its most striking feature is the common use of negative criteria to assess industrial situations. Occasionally some earlier standard is specified, as if it were absolute and satisfactory, and changes are related to it. This applies, for instance, to the comparisons that are often drawn between current output per worker and that attained pre-war. They certainly have their use. But they do more harm than good when the limitations of pre-war levels of output are forgotten. For it is easy to conclude that the first step to recovery lies with restoring pre-war conditions—an altogether unwarranted conclusion.

But more serious, and indicative of a fundamental malaise, is the use of negative criteria to justify positive evaluation, as if good signified merely the absence of evil. Incentives themselves are assessed from this point of view: they "work" if they keep the workers from slacking; that their real scope is limited only by the capacity of the worker is ignored. In the same manner, industrial relations are regarded as "good" on the basis of an absence of disputes, and a supervisor does "well" as long as "the men don't seem to mind him". The fear of the sack has altogether "good" effects, since there are fewer absentees and because it is possible to get rid of the inefficient, insubordinate or otherwise undesirable worker. The recruit is "well" placed if he professes no definite hatred for his work, as "co-operative" if he does what he is told, as "dangerous" when he questions the order of things. "Not bad" is supposed to mean that his work is "good". That reprimanding for bad work should be much more general than commending for good fits well into this atmosphere. It is as if the whole range of positive values had been struck off and "satisfactory" as a label represented the height of ambition.

This method of assessing the workers' performance has not so far been thought remarkable. Yet it is as odd as would be that of a chairman who told his shareholders at the annual meeting that trading had been good since the firm had made no loss, or that of a teacher who commended his pupils for having attained their own average marks, or of the civil servant who never took wrong decisions because he never took any decision of any kind, or of a moralist who was satisfied with mankind because the majority did not steal. And it is not less but more disturbing still that industry is not alone in using negative criteria to assess facts, but is apparently in the company of numberless Britons who in their private lives profess definite satisfaction at finding that there is nothing so immediately wrong as to call for early action. For a people who harbours more 'don'ts' than 'do's' whilst there is much scope for action and even glaring examples of waste in its midst has lost its bearings as surely as did the man who strolled into the desert with his eyes fixed on his feet. The absence of death is not an adequate criterion for life.

In fact, the problem of finding inducements for the workers to contribute their maximum to production has been becoming, slowly at times, faster at others, progressively more urgent since the last decades of the nineteenth century; and only an utter unawareness of the extent to which human qualities were being wasted in industry can explain the paucity, in scope and number, of management's attempts to deal with it. Such ignorance is not the result of stupidity. Had they been interested they could have found out, just as a few members of their ranks were interested and did find out. Rather is it the result of a general preoccupation with technical issues combined with an anticipation, only at first sight well founded in reality, of workers' opposition to all changes in the conditions of work that could not be expressed in higher wage-rates or shorter working hours. These two factors have acted and reacted upon each other until, by this time, management has become so used to looking in the direction of technical progress for all increments in output that they have not only forgotten that there are any others, but are quite oblivious to the waste that has piled up behind their back and often nullifies the effects on output of improved technical efficiency. Of this, the war-time refusal of workers in a major engineering firm to operate American machinery newly installed in specially erected buildings is only a particularly striking because unusually complete example.

In general, the notion of the unique significance of technical progress, largely derived no doubt from the phenomenal expansion of the previous century, has naturally led to the belief that the rate of technical progress sets absolute limits not only to possible increases in production, and hence increases in the standard of living, but sets limits also to the possible contribution of the workers to industrial efficiency. That they might have a contribution to make to this very technical advance does not enter this calculation. What is worse is that it takes no account of the plain fact that the majority of manual workers do not operate machines, that the majority of those who do can determine for what periods the machines shall run productively and at what speed, and that virtually all have some chance, which an ever-increasing number take, of withholding their labour from industry altogether, for hours or days and weeks or even lifetimes. That mere economic necessity ties the workers rigidly to the chariot of technical progress, to follow, at the same pace, wherever it would, thus presents a grossly inaccurate picture. To be truthful it would have to show a majority of workers who are not tied to it at all but work with their heads and hands in offices, stores and shops, on building sites and the land and on the sea, and in mines and workshops away from machines. And it would show the rest tied to the chariot at various distances and, more important, with cords of varying but generally very considerable elasticities. With purely automatic machinery, such as forms a substantial part of the equipment of the chemical industry, the elasticity is smallest, the speed of operations being determined by purely technical considerations. Here there is not much of a choice open to the worker but to work at the pace set by the machine or to sever all connection. But for the very reason that the workers operating such machines exercise so little control, their number is comparatively small. The others, much more numerous than these, have a wider choice. They can retard output not merely through being absent but through working slowly. And when groups of them resolutely refuse to follow the chariot of technical progress in its course or at its speed, and the ties between them are in danger of snapping, it may well be that technical progress, and not workers, must give way.

Even judging only on management's own standard, that of technical progress, the distance in industry between capacity and performance is very great. And this distance represents only a part of the waste due to the failure to enlist human qualities in industry.[1] Plain idleness obviously represents such waste: in many workplaces it accounts for more than 10 per cent. of the time the workers are "at work" (1). Yet more obvious is the voluntary loss of working time: this often exceeds one-tenth of the scheduled hours of work. No less important, merely because immeasurable, are the losses of production due to excessive labour turnover and to industrial disputes.

To compare the performances of different firms in the same line of business and similarly equipped does not do justice to the extent of even this portion of the waste, for it is assumed thereby that the better firm is working to technical capacity. Even so, "astonishing" differences between the best and the worst were revealed by Professor Mayo's investigations in American industry (2), and the estimate, current in post-war Britain, that a 20 per cent. increase in output would result from the attainment by all British firms of the standard already achieved by the best is almost certainly on the low side. Estimates for American industry put the increase in output per man hour that could be attained merely by eliminating restrictive practices and by bringing the workers generally up to standards "demonstrated as practicable and humane" at at least one-quarter and possibly more than one-half (3).

In addition to all these there are the shortcomings in the techniques themselves due to resistances from the workers, whether conveyed in the negative form of an absence of suggestions from them for the raising of technical efficiency or in terms of deliberate obstruction to changes originating elsewhere. The story of the Tolpuddle martyrs, who were sentenced to deportation early in the nineteenth century for destroying new machinery, is repeated day by day in modern industry. Only the new version of both the crime and its punishment is more subtle: its essence is not to destroy the machinery once erected, but to prevent its installation through bluntly indicating a refusal to work it, through insisting on conditions of pay or working hours which would render installation economically unjustifiable, through maintaining trade union rules which make new techniques unworkable. Before such obstacles machinery, the god of the nineteenth century, has long shown utter impotence. It can, therefore, be deity no longer. The most urgent line of development lies elsewhere. Henry Ford II recently declared that "if the problems of human relations in industrial production can be solved, as much progress towards lower costs can be made during the next ten years as was made during the past quarter century through the development of the machinery of mass-production" (4). When the direct successor to the father of modern production techniques can thus address a meeting of American fellow engineers it seems high time that British industry too should adjust its attitude to the human factor in production.

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[1] It must be emphasised that it is not the different degrees of application of techniques between this or that factory that are here under discussion, but only the extent to which the workers' performance falls short of any given technical conditions and of their own capacities.

It is high time also for another reason. The effects of the waste of human qualities in industry are not confined to production and consumption. They are mirrored outside the factory gates, in the workers' leisure time pursuits, in their family affairs, in their attitude to life. Mirrored, not compensated: therein lies the grave danger.

In part Adam Smith was already aware of this more than one hundred and seventy years ago, when he foretold the influence of the division of labour, desirable on economic grounds, on the character of the worker and the welfare of the community, "unless government takes some pains to prevent it". As he wrote in the *Wealth of Nations*: "the man whose whole life is spent in performing a few simple operations, of which the effects, too, are, perhaps, always the same, or very nearly the same, has no occasion to exert his understanding, or in exercising his invention in finding out expedients for removing difficulties which never occur. He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become. . . . Of the great and extensive interests of his country he is altogether incapable of judging. . . . The uniformity of his stationary life naturally corrupts the courage of his mind. . . . His dexterity of his own particular trade seems, in this manner, to be acquired at the expense of his intellectual, social and martial virtues. But in every improved and civilised society this is the state into which the labouring poor, that is, the great body of the people, must necessarily fall. . . ." (5).

". . . Unless government takes some pains to prevent it": Adam Smith was at one with his and succeeding generations in assuming industrial conditions to be unalterable without inflicting grievous economic harm and in looking for amelioration outside. He referred specifically to education. He could not foresee that, in the particular way at least in which it was later applied, his very remedy was predestined to aggravate the disease, not to cure it: it has widened the gulf between the capabilities of the workers and industry's preparedness to make use of them; it has trained the workers to assess the ever-growing waste; and it has forced them into the dilemma in which they could not help themselves but to increase it.

There is no excuse now to prescribe the same medicine and to explain away its failure to cure in the past by demanding larger doses of it for the future. No means to be found outside industry can possibly compensate for the waste of human qualities that goes on within it. Work is so important a factor in a man's life that its influence outweighs all others. Not merely does it occupy the greatest consecutive number of the workers' waking hours. It dominates his life, conditions the rest of it. Its reactions on leisure are altogether of greater consequence than the reverse. Thus frustration, according to one industrialist the industrial disease of the age, is matched, not by virulent purposive activity, as so many well-wishers had expected, but by listlessness, inertia, and *ennui* outside working hours (6). The remedies must be found and applied inside the factory walls. To continue to believe otherwise is to lay oneself open to charges of slipshod thought or insincerity; to display a perverted scale of values in which the rest of the community is geared, at one and the same time, to nurse and comfort—and suffer with—the psychological casualties of industry, whilst making certain, to the best of its abilities and supported by finance from industry, that ever-increasing numbers of industrial recruits are warped, emotionally and mentally, to ever more serious degrees. It is, in fact, to despair of a solution.

There is no reason, and it would be fatal, to despair before examining fully and critically the maxim that waste of human qualities, and hence frustration, is inherent in modern production. If the answer be yes, it would be necessary to proceed to further reckoning, in which the benefits of industrial civilisation are balanced against their cost. If no, decisions would have to be taken as to the steps required to stop it.

So far the spirit of inquiry has been stifled or deliberately diverted into other directions. A major reason for this has been the unfortunate connotations which the term 'science', so eagerly attached to many human activities, acquired when applied in the sphere of management. To the worker it implied yet greater substitution of machinery for his skills, the speeding up of work, greater insecurity, and the more rigid exclusion of human, personal factors from industrial production. Thus F. W. Taylor, the founder of the movement known as "scientific management", was from the first opposed by the trade unions, and came to attack them in turn towards the end of his life; to the British workers in particular he came to personify the hated American methods of production. To management, especially to those of its members who are steeped in the natural sciences, as well as to many academics, it seemed merely a misapplication of the word, to be bracketed with the contradiction in terms that they discerned in 'social sciences'. And management's reticence seemed the more justified when subsequent developments in the social sciences themselves brushed aside some of Taylor's conclusions (7).

Not all firms stamped into the opposition lobby. The Renold Coventry and Chain Company, for example, began applying scientific management in the early years of this century, and an increasing number of firms have employed scientific methods over various periods. But the workers' tendency to decry as Taylorism all methods relying on scientific principles was generally only matched by management's determination automatically to disavow even the remotest connection with it. And in this odd alliance between workers and management was lost the first lesson on the requirements of all kinds of relationships, namely that they need to be adjusted to continually changing conditions.

In the new era of growing administrative units and more rigid economic systems it became, in any case, at one and the same time progressively more important and more difficult to implement the two overriding principles of that lesson. The current waste of human qualities in industry is adequate comment on the utter failure to heed it. Change has become painfully slow, and the reluctance to experiment with a variety of incentives because that would be "a nuisance, an uncertainty, and an additional cost" (8) is only a pointer to the resistance that would be encountered were there a widespread move towards adjustment. But what there is is too little even if not too late: for, having failed to apply even the first principle, the early detection and adequate diagnosis of the changes necessitating adjustment, the great majority of firms have not even come into view of the second, the methods of adjustment.

For one thing, they lack even the most elementary tools to do the job. Spontaneous and continuous personal contact of the management with the workers yielded the required knowledge in the past, and still does so in many a small firm today. In most modern factories, though their need is all the greater, continuous personal contact is patently impossible. But nothing has really taken its place. To take only one example, it can authoritatively be asserted that "few industrial employers keep or, if they keep, look at records of comparative output" (9). Most are unable to measure accurately and in useful form even so obvious a waste as that caused by absenteeism (10). The mere collection of such records would, of course, not be enough. A child that wishes to look over a fence does not satisfy its initial curiosity merely by finding a box on which to stand. It must put it down at the right spot, climb onto it, and look. And even looking is no guarantee for comprehending. The whole manoeuvre is no more than preliminary to that; but it is an essential preliminary. Records and statistics are no more than the box on which the management must stand if it wants to see further than the brick wall. The manager who thought of reducing absenteeism by sending all late-comers home for the day, and discovered only much later that the girls used this chance of having days off, as it were, by permission, may serve as a warning to those who think otherwise. The absence of adequate data is bound to make such misinterpretation a regular feature of industry.

And this is precisely what it is. After long years of research into American industry, Professor Mayo has concluded that "in every instance of which we have first-hand knowledge there is clear evidence that the usual ideas and practices in industry are based on a general misconception of the nature of the problem and consequently on a misconception also of the nature of effective remedy" (11). The paradoxical position has long been reached in which the great majority of managers, immensely better placed than anybody else to observe the workers' attitudes to work and to managerial policies, and to act accordingly, regulate all their employee relations on the basis of a handful of maxims that were perhaps valid at one time but have certainly been handed on, untested, ever since.

CHAPTER II

CYCLES OF SLOW CHANGE

As precedents and regulations,
Like some long lingering malady,
Drag on and on through many generations . . .
Reason turns folly, blessings curse. . . .
GOETHE—*Faust.*(1)

The interaction of change and adjustment — The first cycle: *incentives in early medieval gild and community* — *their disintegration* — *the unholy combination of Puritan and economic teaching* — The beginnings of the second cycle? *Theories of higher wages and shorter hours* — *and their application in the nineteenth century.*

THE adjustment of industrial practices to changes in the conditions affecting industry must of necessity follow such changes. But the intervals at which it follows them can vary. They are determined firstly by the relative ease with which the changes can be detected and the adjustments made; and secondly by the relative preparedness of responsible people to undertake these operations. Detection of change and consequential adjustment are relatively easy to complete during periods of slow change and flexible industrial organisation; in the early days of the medieval gilds, for example, the time lag might be expected to be short. They are difficult, and the time lag is bound to be greater, when changes are rapid and when the industrial organisation has become rigid; this is the case today. But such inherent differences are quite unimportant when the executives, whether medieval masters or twentieth-century works managers and trade union officials, are not prepared to make the required adjustments or even to find out about the changes that necessitate them.

In that event, there need be no illusion about what will happen. In the first place, the lack of adjustment will affect the change, slowing down its rate of progress and altering its complexion. For industry is not only a receptacle of change; any adjustments it makes in its practices will induce further change outside. Its workers are the primary transmitters in this *perpetuum mobile.* Industry's production record is also of importance for it. In as far, therefore, as industry fails to play its part in accepting and transmitting change, it will retard change in much the same way as a bad pupil can delay the progress of his class: firstly, it does not make its contribution to progress; and secondly, energies that might be otherwise allocated are devoted to inducing it to adjust its practices after all.

Automatically, industry's recalcitrance also distorts the change. By how much it does so depends on the degree to which industrial activities are integrated with the rest of the community's pursuits and, of course, on the strength of the forces making for change. To a large extent both determine, too, how much general resentment is built up by industry's failure to co-operate.

In the second place, the failure on the part of industry to adjust itself to change conditions the methods by which the adjustment takes place, as, eventually, it undoubtedly does. For change goes on, if only because industry is able to hold it up in only a sector of human activity. If adjustment does not originate within industry, it will be imposed on it, at some date, from without. There may be a limit, for example, to the workers' readiness to endure a growing conflict between what goes on during working hours and what goes on at other periods of their lives. But whatever the source, the results of imposing adjustment from without industry will be as different from timely internal adjustment as are those of a breach in a dyke from an early reshaping of it. Indiscriminately what is worth retaining will perish alongside that which is not. In the belief that the industrial structure has not only shown itself, but actually is, wholly incapable of change, the whole of it is liable to be labelled 'out of date' and to be thrown overboard lock, stock and barrel. That what will follow for the many will not be heaven but abject misery is a secondary consideration; both destruction of the old and growth of the new are always accompanied by pain.

This is not mere *a priori* reasoning. In all essentials all this has happened before. History does not, of course, repeat itself; and it is possible to find comforting reassurance in the differences between the conditions obtaining in the last days of the gilds and those obtaining in twentieth-century industry. But it may be wiser to reflect on their essential similarities; and this is especially so as the sequence to be traced is the very common one of change, inadequate adjustment, and decay.

The First Cycle

The primary unit of production in the early days of gild organisation was the independent master who worked with one or two assistants, whom he himself may have trained, and an apprentice or two still learning the trade (2). The market for his products was limited and did not in general expand far beyond the city walls. Similarly, he was little affected by what went on in the outside world. There was little interchange of ideas, little change in the methods of work. The master depended on the continued custom of the small community; and the community in turn relied on him, as a matter of course, to provide it with its bread or meat, boots or dresses, cupboards or houses, in much the same way as his forefathers had done.

The relationship between the master and his workmen and apprentices was of the closest. No lasting social distinction divided them: for most workmen and apprentices would become masters in due course (3). A unison of outlook was also induced by the paternal organisation, in which they all not only worked but also lived together in the same house, ate the same food, shared in the same pleasures and in the same sorrows, knelt side by side in church on Sundays. Their relationship was similar to that of "the head of the household to the sons of the family" (4). The composition of the 'family' rarely changed, for apprentices and workmen were generally taken on for long periods of service. The duration of apprenticeship varied between four and ten years (5) and it was usual for the apprentice who had completed his term to serve with his master for another year or some other specified period (6). And other workmen were bound in covenant for periods of three or four years at a time (7).

It was natural that the immediate stimulants and deterrents with regard to work should take their cue primarily from this paternal organisation, supported, as it was, alike by gild, city and church. The indenture to which the apprentice had to swear solemnly before the town authorities and all the gild brethren (8) contained admonitions covering obedience, self-control and fidelity to his master's service and protection of his master's goods from loss; the apprentice was obliged not to steal his master's goods, "not by sixpence in the year", and not to frequent inns and gaming houses; "he must not lie forth of his master's doors, nor marry without his master's license (9) . . . and he must do all servile offices about the house and be obedient to all his master's commandments, and shall suffer such correction as his master shall think meet" (10). The Tailors of Exeter summed it up by instructing the apprentices that "ye shall well and trewly behave yorselfe" (11).

The master's authority to see that his boys and men carried out these instructions was supported by sanctions outside his house: for instance, if anyone of the men "shall conduct himself in any other manner than properly towards his master, and act rebelliously towards him, no one of the trade shall set him to work until he shall have made amends before the mayor and aldermen, and before them such misprision shall be redressed" (12). While provisions of this kind were made more effective by instituting sanctions against the master who failed to report such incident (13), much of their weight was undoubtedly derived from the widely acknowledged authority of the gild as a corporate institution (14). The ceremonious way in which gild functions were carried out was itself conducive to investing in the gild something of the halo and the air of permanency attaching to public institutions. The width of its functions, comprising, in addition to matters of technical and economic interest, religious and artistic activities and others connected with what are now termed the social services, was a yet more weighty factor (15). Many a "Gihault Court" heard and attempted to settle disputes between members, before they could proceed to the common law (16); it also dealt with masters who held back wages or those accused by their workmen of other offences, such as that they did not give proper training (17). Finally, the oath which bound all members to observe gild regulations had a supernatural backing and was recognised in Church courts.

The emphasis in all this was on propriety. Standards, rigidly laid down by regulations, were to be maintained by equally closely regulated methods. Extraordinary attainment was at a discount. Often initiative on the part of craftsmen was deliberately discouraged: it might upset the equality within the group and possibly endanger the livelihood of other members (18). When gild officers went "to examine prentices" to find out not only whether they were "expert or cunning in their craft" but also whether they knew "how the constitutions be kept" and whether they had "good conversation and living", all was well as long as the apprentice was up to standard (19). There was no grading and no tangible reward was given to the particularly advanced apprentice or worker, no rapid promotion or rise in wages. Gild regulations laid these down in detail and were strictly adhered to. The fixing of wages was the obvious corollary to the fixing of prices, and an incentive element was quite exceptional. A Leicester indenture prescribed 8*d.* for the first year of apprenticeship, rising to 6*d.* per week for the eighth year; an Oxford statute 12*d.* for the first year and 20*s.* at the expiration of the term. Wage rates generally remained unchanged for generations; and if the master paid more than was "of old times . . . accustomed and ordained" he was fined, and similarly the men if they "take more from the masters" (20).

To attain the similarly time-honoured standards of performance the basic need for apprentice and workman to earn their living; direct action by the master in encouraging their work—including sometimes the challenge to earn the hand of the daughter of the house; and, most of all, the desire not to offend the gild and thus to advance to the position of an independent master, were assumed to be sufficient stimuli. The regulation of activities did not end with the acceptance, by the gild, of the masterpiece or similar qualification. There was always little chance to conceal incapacity, dishonesty or slackness. Minute regulation covered all aspects of work. Even detailed supervision by the public was not unknown; in Bristol, for instance, work was supposed to be done "in halls and shops next to the road in sight of the people" (21). And there was the continuous desire to gain and retain the approbation of the small community. Only thus could the master advance to honoured office in gild and city, to support and reverence in old age, and to a place in the Kingdom of God thereafter.

In some trades the conditions for paternal organisation on gild lines never existed, and in others they had ceased to exist by the turn of the fourteenth century. Mining and woollen, wire and glass manufacture were early examples of capitalist enterprise (22). In these trades the workers did not live under the same roofs as their masters and their chances of becoming independent producers were small. They were permanent wage earners. Their material needs were held to provide sufficient urge for them to come to work and to please their employers (23). Sometimes attempts were made to relate their wages directly to their performance. In some of the trades there was payment by the piece. In tin mining there existed a system of payment which would now be termed a group task wage; the regulations for the payment of hired miners in the royal mines of Beer Alston in Devon were as follows: "those who can find ore in their diggings shall receive for piece-work as before, that is to say, 5*s.* for the load, as well of black as of white ore, if the white cannot reasonably be put lower. And those who are engaged in dead [i.e. unremunerative] work and cannot find ore in their diggings, and yet work more, for some dead work is harder than [digging in] the vein, shall be at [day] wages until they reach the ore, so that all piece-work be undertaken by two or three gangs who divide the profits between themselves, as well to those who doing dead work as to the others". This system would not work where the "dead" work was exceptionally heavy, and in 1323 "dead" work in an old Devon mine was paid at 3*s.* 4*d.* the fathom or at a daily rate (24). But normally payment was by time (25); and little attention was paid to finding new incentives to work.

From the latter fourteenth century onwards a growing number of craft gilds were subjected to changes tending to their disintegration. The growth of towns and markets for manufactures encouraged methods of organisation and production which it was increasingly difficult to maintain side by side with the prevailing pattern of gild life. And the sense of permanence of relationships and institutions faded in an era decreasingly hesitant about questioning time-honoured ways and values and better able to spread new ideas and practices. All the conditions on which the incentives of earlier days had depended were thus successively whittled away. But adjustment on the part of the gilds was quite insufficient. The large influx of workers seeking employment in the cities made existing masters afraid for their position (26). They sought to maintain it by imposing increasingly irksome restrictions on entry into the gilds via apprenticeship and, where entry was attained, on craftsmen setting up as independent masters. Whole classes of people were excluded outright from admission on the grounds of some inherent deficiency of status or physique (27). Others were confronted with staggering entrance fees (28). On starting, some apprentices were made to take an oath to the effect that they would not set up on their own without the masters' consent; and fees were demanded for the admission of a new freeman (29). The paternal organisation of production declined *pari passu* with the workers' opportunities to become independent craftsmen, and by the middle of the fifteenth century there existed in many trades and localities a definite social distinction between master and workmen (30).

A rapid increase in the number and scope of regulations affecting the relationship between the two parties marked the changes: they were mostly designed to maintain an out-of-date pattern. Moreover, it remained the business of the masters to enforce the regulations, and in many cases it no longer suited them to do so. This was so, for instance, with regard to the restrictions on the numbers of apprentices, workmen and tools that any master was permitted to employ (31); and their ineffectiveness ensured that for many a master it soon became a physical impossibility to house all the workers he employed under one roof. Wages, hours and other working conditions, again, were no longer guaranteed: to the masters the prospect of wealth, coupled with a plentiful supply of workmen, suggested lower wages and longer hours. Thus the practices of earlier capitalist industries became familiar in trades which were, according to the letter, still operating on gild lines (32). As in the woollen industry, the workmen were sometimes required to take part of their small wages in "unprofitable wares", or, when they were paid by weight of material given out, the employers used false weights (33).

Not even king and country were able to stop the trend or consequent abuses (34). It was relatively safe to disregard the Acts and Statutes, especially so when the magistrate happened to be a local master also. The famed Statute of Apprentices, which sought to restore several features connected with the early gilds, was no more than the most glorious rearguard action (35). Like all rearguard actions, it was limited in space and time. It never applied to places chartered after 1562, and new industry flocked into Birmingham and Manchester, and the other new towns, and flourished there. Elsewhere the Statute was observed spasmodically, whenever and wherever it was too dangerous not to. Enforcement was strictest under the Privy Councils of Elizabeth and the first Stuarts (36). After the Civil War the Statute became largely a dead letter (37): the fixing of wages fell into disuse (38); the limitations on the number of apprentices went largely unheeded (39); fees of entry were increased vastly (40); and masters were admitted who had not even served an apprenticeship (41). Workmen's strikes, prosecutions of offending masters by workmen's organisations, petitions to Parliament, inquiries by Parliamentary Committees, and new legislation, introduced or even passed, marked the decline of the gild regulations as embodied in the Statute and the grievances of the workers (42). They ended neither (43). An Act of 1803 finally put an end to the prosecution of masters in the woollen trade; it was renewed annually until 1809, when the laws were repealed. Within a further nine years the Statute of Apprentices, the last vestige of early manufacture and an anomalous survival, had been repealed for all trades.

No longer subject to close and continuous supervision by the master and the gild and deprived of the ladder which had formerly led to the status of independent craftsmen and all that status entailed, the workmen no longer gave satisfaction. Before the turn of the sixteenth century an Act of Henry VII already instanced that "divers artificers and labourers retained to work and serve waste much part of the day and deserve not their wages, sometime in late coming unto their work, early departing therefrom, long sitting at their breakfast, at their dinner and nonemete, and long time of sleeping at afternoon. . . ." (44). A half-century later it was added that they had become "houghty minded, high stomached, and wanton conditioned" to others and "less obedient and serviable to their masters, not knowing their duty to their superiors" (45). Altogether, there were many "abuses and enormities reigning in our apprentices at these days" (46), of which rioting, especially in London, was a particularly obvious sample.

The new religions made things worse. It is quite true that they set greater store, not less, on the supernatural value of good, hard work than the medieval Church had done (47). Where the Church had regarded good work as a part only, though a necessary part, of a good life, the new beliefs, particularly those of the various Dissenting sects, equated the two, and found it impossible to visualise any joy or purpose in life apart from what could be found in work (48). Achievement through work was regarded both as sign of and a reason for God's favour; failure as the opposite: "If God show you a way in which you may lawfully get more than in another way (without wrong to your soul or to any other) if you refuse this, and choose the less gainful way, you cross one of the ends of your Calling, and you refuse to be God's steward" (49). At the same time, success need not be easiest in the calling chosen: parents were admonished to choose such trades and callings for their children "as have least dangerous temptations . . . and not those that tend most to the ease of the flesh, or worldly ends" (50). The will of God bade men to work hard—as much as they could (51). Even prayer came second to this primary purpose, and was often related to it, as in this prayer composed for servants: ". . . Give me grace to obey my master . . . not with eye service . . . but with singleness of heart, as unto Christ . . . make me patient of reproof, willing to be taught, and subject with all fear and godly reverence, not only to the good and gentle, but also to the froward" (52).

But, partly because of this very appeal of the new beliefs, the adherents of the new sects tended to be masters rather than workmen. Of the workmen few took to the gospel of excessive work. They tended to regard work not as an end in itself but as a means whereby they could gain a livelihood, and something over for enjoyment. To the Dissenters this latter purpose was particularly obnoxious: and this attitude sufficed to exclude from consideration a possible means of strengthening the incentive to work, namely that of encouraging the workmen to raise their standard of living by harder work and higher earning. Instead, if the workmen did not know what was good for their souls it was considered proper that they should be taught.

In practice, the insistence of the masters on hard work combined with a frugal standard of life could only lead them to apply but one principle in dealing with their workmen. It required that the attainment of this frugal standard should be made as difficult as possible: it involved paying workmen as little as they needed merely to keep alive, depriving them of all means whereby they might be able to increase their incomes outside of industry (53) and making them work long hours from an early age (54). What they needed, it was argued, was continuous work under "regulation", i.e. under the strict eye of the employer. To be out of work and to be work-shy was held to be synonymous. For both the remedy lay in "the workhouse", which was guaranteed to be the last place that anybody would wish to enter; there the recalcitrants would be disciplined and taught the joy in work (55).

This principle and its corollaries permeated British industry and trade, particularly in the seventeenth and eighteenth centuries. The Dissenters were not numerous, but they exercised a quite disproportionate influence on industry and trade. Excluded from direct participation in public affairs, they threw themselves into business and were found at the head of many industrial, trading and city companies (56). The most eminent iron-masters of the eighteenth century were of Puritan stock (57). And during the previous century already the Dissenters were dominant, according to Petty, "in all the particular towns of the greatest trade in England" (58), e.g. in the Lancashire clothing towns, in Bradford, Leeds, Halifax, Birmingham, Leicester, Gloucester, and Taunton, and in Exeter, the capital of West England textiles.

Further, contemporary scientific thought, and economic theories in particular, strongly supported the Puritan methods of inducing the workmen to work. Anything that could not be expressed "in terms of number, weight, or measure was excluded from consideration": sensible people were expected "to use only arguments of sense, and to consider only such causes as have visible foundations in nature; leaving those that depend upon the mutable minds, opinions, appetites, and passions of particular men to the consideration of others" (59). This eliminated all but material incentives. Moreover, on this basis, low wages meant low prices (60) and longer hours proportionately greater production. A large volume of production and low prices were wanted to increase the export trade, which was held to represent the only real gain to the country (61). Also the more labour could be recruited and the more work could be extracted from the workers, the lower would be the wage per piece. To find employment for those out of work, as prescribed by the Act of 1601, without lowering wages was to attempt the impossible; the sole result of such endeavour would be to "render the poor more bold" (62). This was the supply-and-demand theory of wages. The second method of keeping wages as low as possible, though it was not altogether compatible with the first, was just as near to the Puritan heart: it consisted in making wages dependent on the cost of food. For to raise wages when the price of food was not going up would undoubtedly result in a proportionate reduction in the time worked by the poor "which is a loss to the Publick of the fruit of so much labour" (63). And the cheaper the provisions, the lower wages could be. Such legislation as the Irish Cattle Acts was consequently continuously attacked; for, by lowering the cost of food in Ireland the Acts allowed that country's woollen industry to compete successfully against the English (64). In this way the efficiency which economic theorists were preaching as a specific for social disorders could be canonised as an ethical principle by the Puritans, a marriage, in Professor Tawney's words, "as captivating as it was novel" (65).

In terms of output and prices its consequences were perhaps disappointing. Slackness on the part of the "ungodly" continued to cause frequent complaints, and even the Act of Elizabeth was called in at times to help to keep the workers on the straight path (66). Deprived, "for the glory of God", of their leisure hours, their holidays and their amusements and without a hope of improving their standard and standing, the workmen worked, according to contemporary chroniclers, just as often and as much as they required to keep themselves in food and drink:

> The Lab'ring Poor, in spite of Double Pay,
> Are saucy, mutinous, and beggarly,
> So lavish of their money and their time,
> That want of forecast is the Nation's crime;
> Good Drunken Company is their delight,
> And what they get by day they spend by night (67).

"and ask him in his cups what he intends he'll tell you honestly, 'He'll drink as long as it lasts, and then go to work for more'" (68).

The main result of this unholy synthesis of scientific thought and morals was to be measured not in terms of increased production but in terms of the long-drawn-out misery that ensued among the working classes. Occasionally the need to attract workers to a new mill or workshop caused wages to rise above subsistence level; but at the earliest opportunity these were again reduced. As the eighteenth century progressed, every decline in trade led to immediate dismissals, since the master would not work for stock nor let his workmen stay on in the hope of better times, as had been the custom even only a century earlier (69). In the middle of the century many journeymen engaged in framework knitting in their own homes earned 6*s.* per week. Some were employed for the sole purpose of providing the masters with the opportunity to exact frame rents. Employers awarded the work so as to maximise their income from frame rents. A frame cost between £6 and £8; the rent for it amounted to 1*s.* 3*d.* to 2*s.* per week, and had to be paid whether it was used or not. Employers were known to refuse to buy back the materials they had issued for working up (70). Workmen-owners of frames were simply refused work. Similar abuses obtained in other trades. To every threat to put a stop to these practices, the masters replied that any restraint would drive trade to France or some other country where the workers were content with lower wages (71).

Every increase in the mechanisation and the concentration of production was a godsend to the employers. For did it not render labour so light and subject to such continuous supervision that women and children could do it as well as the men and at wages much lower than they? In the growing mills and factories strength, experience and skill in the old sense ceased to matter (72). Endurance to mind the machine for sixteen to twenty hours a day, a memory for instructions and regulations, and swiftness in avoiding the hazards of dangerous and unguarded machinery took their place. Weavers, blacksmiths, tanners, sailors, and yeoman farmers, boys of six and girls and women, merged their separate identities in the pool termed 'labour', whence employers extracted whom they would. The cheapest were pauper children sold by the parish, their guardian, into the absolute control of factory and mill-owners (73). Next came other children, then the women. "In most mills employing 500 people there are not more than 30 to 40 operations which cannot be performed as well, generally much better, by women and boys, than by men", and "no man will be retained in a mill to perform operations which can be as easily performed by a woman or a boy", whose wages were about one-fifth or one-quarter of those paid to men (74). And the wages could be reduced further, by payment in truck or, better still, by fining for "misbehaviour": thus "any spinner being sick and cannot find another spinner to give satisfaction must pay for steam per day 6/–; any spinner slipping with his gas lighted 2/–; any spinner heard whistling 1/–; . . . being five minutes after last bell rings 1/– . . ." (75). In 1843 the hourly contract of work was introduced into bookbinding, much to the satisfaction of the Treasury, for it "gets rid of loss of time and superannuation"; within a few years the practice was extended to building and other trades (76).

Fear of the workhouse and of utter destitution drove labour to work under any conditions. If a worker dropped out for any reason there was another to take his place. So cheap was labour compared with the machines that the opulent clothiers made it a rule to have one-third more men than they could employ "so as to guard against all human shortcomings" (77). For the machines had to keep on running or the next state of the nation would be worse than the last.

For the moralists there was no doubt about this value of continuous work. "All experience proves that in the lower orders the deterioration of morals increases with the quantity of unemployed time of which they have the command. Thus the bill (introduced in 1818 to regulate child labour in cotton mills) actually encourages vice—it establishes idleness by Act of Parliament; it creates and encourages those practices which it pretends to discourage" (78). As it happened, higher considerations won: the hours were too long to allow of adequate teaching of the Bible, and had therefore to be shortened. Pity, philanthropy, humanitarianism abounded; but beyond patchy amelioration nothing surely could be done. The working conditions in the factories were deplorably bad; but they could not be improved without harming production. So the drudgery was broken once or twice a year by a day's outing which the employer munificently bestowed on his hands (79). Attempts were made to reintroduce wage-fixing by the Justices of the Peace because "there are many people who would so *oppress the poor* to get goods manufactured very cheap . . ." (80). And when in 1842 a Royal Commission of Enquiry revealed the state of affairs obtaining in the coal-mines everybody was duly shocked (all, that is, barring the owners, who "were not seriously concerned over the dangers faced by the men every time they descended into the pits" (81)); and legislation was passed, against opposition, forbidding the employment of women and young children underground, since it was, apparently, bad for their health.

The economists' arguments differed from those of the moralists; but their conclusions were still the same: "The great proportion of fixed to circulating capital", wrote Senior, "makes long hours desirable". Profit was made exclusively in the last hour. To shorten the working day would be tantamount to letting the machines stand idle at a time when 19 or 20 hours' production was required so that their capital cost could be redeemed in good time (82). "The simple circumstance of so large a proportion of the produce of our mills being exported, renders all discussion of the wisdom of a 'Ten Hours Bill', in their case, superfluous" (83). Such a proposal, according to Labouchere, the economist, ". . . was neither more nor less than one to diminish by one-sixth the productive power of the great manufacturers of the country. . . . A reduction in wages must follow . . ." (84). All political economists supported him: Hume, Dr. Bowring, Mark Philips, Charles Villiers, Roebuck, Baring, the younger Ricardo, Lord Brougham, Lord Ashburton, and Sir Robert Peel (85). John Bright insisted "that it was a delusion practised upon the working classes . . . advocated by those who had no knowledge of the economy of manufactures", and forecast that "the demands of the workmen and of the masters, would compel them to retrace the steps they have taken . . ." (86). Forty years later still, another economist, a member of the Royal Commission of Enquiry into the decline of trade and commerce in the 1880's, used the same arguments again in protest against the proposal to shorten the working day by factory legislation (87).

But, round about this time, some of the working classes in London regained the relative rate of wages which they had earned in the fifteenth century, though, adds Rogers, "perhaps in some particulars the recovery (was) not complete" (88).

The beginnings of the second Cycle?

Widening markets and expanding production had knocked away the main incentives of gild days. Little had been done to fill the void. And the workmen had adjusted their efforts to a life full of poverty and devoid of hope. The poor workman had become the workman predestined to poverty; the unskilled labourer the incorrigibly bad; the unemployed the unemployable. If his elders had been allowed to tamper with Defoe's couplets on page 25 they might well have altered the line to read:

> The Lab'ring Poor *because of* Double Pay,
> Are saucy, mutinous and beggarly——

and probably rightly so.

But times were changing even as Defoe was yet writing. Industry and trade expanded rapidly from the late seventeenth century onwards. Prosperity increased with them. It was bound, eventually, also to affect the outlook of the workmen. The transition was patchy. It proceeded comparatively fast in some districts and more slowly in others; yet others remained untouched for many years. It is a commentary on the capacity for observation and the intellectual honesty of major contemporary chroniclers that they noticed this transition and began openly to question in the light of the new facts, the validity of the accepted theories, even though they themselves had subscribed to them at various times (89).

Sir Josiah Child, Daniel Defoe and Arthur Young belong to those writers whose views on what made British workmen work were not always consistent. Child clung to two largely contradictory ideas in one book: the first was that low costs demanded low wages; the second that in Holland, the richest trading nation at the time, workmen enjoyed comparatively high wages. He noticed the contradiction and concluded that high wages must be a sign of riches, not the cause of them (90). Other writers found that the simple inverse correlation of wages and effort could no longer, even in England, be held to be true. Thus Defoe, the author of the slanderous couplets, came to suggest later that "if you expect the poor should work cheaper and not perform their work slighter or more overly, as we call it, and superficially, you expect what is not in the nature of things": there was a "great advantage to a Nation of having such an employment for their Poor, as may make them not live only, but live comfortably . . . (for) by the good Pay, the Weaver and his dependent Tradesmen are encouraged to make the Wares good" (91). More than a half-century later, on his Eastern Tour of 1771, Arthur Young found that "everybody but an idiot knows that the lower classes must be kept poor, or they will never be industrious" (92); but after a lapse of another fourteen years he reported that "though the (master) . . . must be a great friend to low wages in theory, he will not be so in practice; for such lowness is merely nominal . . . a cheapness that keeps the men poor and wretched without making the masters rich; . . . cheap labour to the master and the benefit of his fabrick, is not to be discovered by the pay *per diem*; for skill, goodness of work, etc., come into the question and form a material part of it. . . . In . . . enquiry, 10*s*. per week will generally be found to be a cheaper wage than 8*s*." (93). The efficiency of the English workman was found to compare favourably with his Irish or Scottish counterpart, even though he was paid higher wages. Messrs. Lane, a linen manufacturing firm near Cork, for instance, complained that Irish weavers would not work as much as the English (94). And a certain Mr. Smeaton, who was engaged in estimating the expense of cutting a canal from Carron to Dumbarton, thought it necessary to observe that he had found, "from whatever cause", that about a fourth part more money was required to execute the same quantity of work in Scotland than in England (95).

Adam Smith summed up and rationalised these observations: "The liberal reward of labour . . . increases the industry of the common people. The wages of labour are the encouragement of industry, which, *like every other human quality, improves in proportion to the encouragement it receives*" (96). He drew attention not only to the more obvious fact that plentiful subsistence increases bodily strength, but stressed also the labourer's "comfortable hope of bettering his condition and of ending his days perhaps in ease and plenty". He concluded that the maxims of the previous two centuries were no longer valid: "In cheap years it is pretended workmen are generally more idle, and in dear ones more industrious, than ordinary. A plentiful subsistence, therefore, it has been concluded, relaxes, and a scanty one quickens, their industry. That a little more plenty than ordinary may render some workers idle, cannot well be doubted; but that it should have this effect on the greater part, or that men in general should work better when they are ill fed than when they are well fed, when they are disheartened than when they are in good spirits, when they are frequently sick than when they are generally in good health, seems not very probable. Years of dearth, it is to be observed, are generally among the common people years of sickness and mortality, which cannot fail to diminish the produce of their industry".

He found much greater danger in the fact that workers, "when they are liberally paid by the piece . . . and . . . wherever wages are higher than ordinary" are liable to overwork themselves. Carpenters in London, for instance, were apparently not expected to last "in utmost vigour above eight years. Almost every class of artificers is subject to some particular infirmity occasioned by their excessive application to their particular species of work. . . . Excessive application during four days a week is frequently the real cause of idleness of the other three". Consequently, "if masters would always listen to the dictates of reason and humanity, they have more frequently occasion to moderate than to animate the application of many of the workmen. It will be found that the man who works so moderately as to be able to work constantly, not only preserves his health the longest, but, in the course of the year, executes the greatest quantity of work". And the independent workman, he suggests, is "generally even more industrious than the journeyman who works by the piece"—a refutation of the Puritan maxim that workers would not work except under the eye of an employer.

Payment by the piece, to which Smith referred, embodied in some small part such independence. It became a common method of remuneration under the domestic system, and survived the concentration of the old trades into factories; but there strict supervision frequently superseded it in importance. And in the new industries, such as those based on iron and steel, there was little attempt to introduce payment by the piece, even after the publication of the *Wealth of Nations*.[1] Nor did the idea that high wages, particularly when related to output, stimulate the workers to greater effort appeal to many manufacturers. For one thing, it was illogical. It was also uncomfortable. So little was heard of it until there was more practical evidence, to wit, up to the second half of the nineteenth century.

The same is true of the isolated developments in connection with employees' welfare that were based mainly on enlightened self-interest on the part of employers rather than on philanthropy. Robert Owen's, for example, derived from the appreciation that only when the employer's effort to improve conditions had a definite relation to his whole attitude to management would the employee feel that efforts at factory reform would really be permanent and progressive (98). "If, then, due care as to the state of your inanimate machines can produce such beneficial results," he reasoned, "what may not be expected if you devote equal attention to your vital machines, which are far more wonderfully constructed? . . . I have expended much time and capital upon improvements of the living machinery; and it will soon appear that the time and money so expended in the manufactory at New Lanark, even while such improvements are in progress only, and but half their beneficial results attained, are now producing a return exceeding 50 per cent. and will shortly produce profits equal to cent. per cent. on the original capital expended on them." (99). In the main this capital took the form of improved working conditions and facilities for education. But as early as 1790, when he was still a mill manager, Owen employed an incentive method closely akin to what is now termed 'merit rating'; for he sought to stimulate his workers by entering an annual assessment of the general behaviour of each in certain 'books of character', the assessment being facilitated by a peculiar mechanism called 'the silent monitor'. At Boulton and Watt's some security was provided through a Sickness Society run by a committee of workers (100). At Crowley's a doctor, a clergyman and a schoolmaster were maintained jointly by the firm and its employees, who were also insured against death, sickness and old age (101). Among the few other large firms with progressive labour policies were Wedgwood's, Courtauld's, Crawshay's Iron Works in South Wales, Arkwright's factories and Oldknow's mills, Carron Ironworks, Walter Brothers and Wilkinson's (102).

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[1] An early exception was the firm of Boulton and Watt: as the factory grew the partners felt that they could increase keenness by introducing some method of payment by results. Great difficulties were encountered in fixing the times, and the methods adopted at Soho had many imperfections; but the firm was apparently satisfied with it (97).

The change entailing the widest repercussions in industry prior to the middle of the nineteenth century related not to wages or working conditions but to hours. In the agitation for the Ten Hour Day the advocates of the measure were able to point out that the belief that long hours meant high production was simply not borne out by experience over the past forty years. As Macaulay emphasised during the successful debate in the House, "we have already, by law, greatly reduced the time of labour in the factories. . . . A law has . . . been made which prohibits persons under 18 years of age from working in mills more than 12 hours a day. That law was opposed on exactly the same grounds on which the bill before us is opposed. Parliament was told then, as it is told now, that with the time of labour the quantity of production would decrease, that with the quantity of production the wages would decrease, that our manufactures would be unable to contend with foreign manufactures, and that the condition of the labouring population, instead of being made better by the interference of the Legislature, would be made worse. . . . Is it not universally acknowledged that the evils which were so confidently predicted have come to not pass?" (103).

Indeed, experience clearly pointed to the opposite conclusion. Neither Gardiner in Preston nor Fielding had been ruined when they had reduced the working day below customary lengths. And a firm which had tried to run its mills for fifteen hours a day had found that, after one month, output had fallen off both in quantity and quality, and after four months, when scrapped work had been doubled and output had declined by one-tenth, had restored shorter hours to avoid financial loss (104). When hours had been shortened by one-sixth, output had at first decreased, though only by one-twelfth; and at the same time scrap had been reduced. But some time after, output had come to exceed previous records. By the time the Ten Hour Bill was introduced, observations to similar effect had been available for a major industry like Lancashire cotton for at least a decade (105). They had not dislodged the old beliefs. But they served to get the Act passed and, eventually, also enforced. Within thirty years of the passing of the Act there were few employers who harboured the impression that the reduction had been harmful to their trade, and a number who attributed the inability of foreign manufactures to compete with British to their insistence on working longer days (106). Certain progressive firms in the United Kingdom were then considering introducing a yet shorter working week (107). The central problem had become not whether to reduce hours, but by how much to reduce them, and by how much at a time.

When the accepted theories that arithmetically related production to working hours had thus been subjected to the test of practice, they had been found to be no longer valid. Might not the same be true of the theory that related, inversely, wages and production? More than half a century ago Adam Smith and the other members of the school of high wages had already disputed its validity, contending, *a priori*, that high wages were a greater incentive to production than low wages. By the mid-century the new theory was being put to the test, notably by Thomas Brassey, the famous railway engineer. He concluded after much experience that the price of labour was everywhere the same—that high wages meant high efficiency, low wages low efficiency, "and that not merely for physiological reasons, but for psychological reasons also" (108). "At the commencement of the construction of the North Railway (for instance) the wages of the labourers were 2/– a day. During the progress of the work their wages were raised to 2/6 and 3/– a day. Nevertheless it was found that the work was executed more cheaply when the men were earning the higher rate of wage than when they were paid at the lower rate." He inferred that where wages were low and work unsatisfactory, output could be increased by raising wages (109). It was "rarely the case", Rogers observed later, "that the liberal reward of labour is followed by a material enhancement of price . . . those heads of firms who best know their business are most amenable to the reasonable demands of their workmen . . . and make greater profits than their rivals" (110). Thus practice corroborated theory; and a materialistic century found an overriding incentive for its workers in material reward.

On application it was soon found to confront industry with problems of very much greater complexity than the Puritan position it had superseded. The simplest was presented by the need to provide a wage that was adequate to cover the physical needs of the workers: "Badly fed men are never good workers," and it was a mistake, according to the President of the Union of British Iron Masters, "to explain the cost of labour abroad by the low character of the nourishment upon which the workmen there were content to subsist" (111). Thus it became an increasingly common method of ensuring that the British workman continued to be "well fed", also in times of scarcity and high prices, to allow wages to vary automatically with the price of wheat, or of food in general, or, later, according to a cost-of-living index.[1] That the adjustment of wages to the cost of living was rather crude was not due solely or even mainly to the shortcomings of this or that index. For a variety of reasons, of which Malthus' was certainly not the main, wages could not, for instance, take account of the different sizes and different needs of the workers' families, so that a wage that was adequate to cover the needs of one worker was by no means necessarily adequate to cover those of another; if the needs of the one had been accepted as the standard, the other's might have been satisfied too amply, and leave something even for buying more leisure.

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[1] By 1906 the wages of about 2·5 million workers—mainly in the metal, textile, clothing, food and drink, woodworking and furniture, building and allied trades, public administration, transport and other public utilities—varied according to the cost of living (112). This alliance of wages and cost of living also ensured, to a varying extent, that the workers would not press for higher wages at the slightest provocation; this purpose gained strength as the employers encountered ever greater difficulties in their attempts to reduce wages whenever the cost of living declined.

However, the main difficulties connected with the acceptance of material reward as the dominating incentive lay elsewhere. The case for high wages as an incentive rested on the assumption that they would engender greater production and lower cost. Two points soon became abundantly clear. Firstly, the incentive of higher wages was only effective when the workers *wanted* higher wages. Here, again, there were the differences in the needs and wants and aspirations of different workers and their families, and the varying possibilities of satisfying them; of these wages could take little or no account. More important still, wage levels were subject to considerations that were in no way connected with the incentive value of wages. Workers pressed for higher wages whenever the state of the labour market enabled them to do so in relative safety and with fair chances of success. In times of boom, for examples, there were widespread increases in wages, which could neither be justified by reference to the cost of living nor to conform to the higher' wants and aspirations of the workers and the possibilities of satisfying them. The same applied to wage increases granted to one section of workers merely because increases had been granted to another. It was not surprising, especially in an era in which different levels of earnings tended to be taken as indicative of differences in status, that there should be continuous pressure from the higher-paid workers to maintain and from the lower paid to eliminate, or at least reduce, existing wages differentials. The result was that increased wages were often not balanced by increased production, and sometimes even reduced production (113). And at the earliest opportunity, often as soon as a slump set in, employers, for their part, would try to reduce the wages of their employees so as to reduce costs.

Time and tempers could be spared, so it was believed, and some regularity be introduced to wage movements referred to assessments of the employer's ability to pay by linking wages to another type of index, namely one based on the selling price of the product or of a closely allied product.[1] Other employers again sought to overcome difficulties from this source by sharing profits with their employees. One scheme mentioned by Brassey in 1874 provided for the distribution of profits equally between the capitalists and the employees, and at Brigg's co-operative colliery the books were open to inspection by the employees (115). By 1889 85 profit-sharing schemes had been started in Great Britain; by 1892 another 63 (116). But during the subsequent depression, some 37 schemes failed: profit-sharing was always liable to fail when there was no profit.

To some extent the attempts to divorce wage movements from the shifting bargaining strengths of the two sides of industry undoubtedly met with success. And some wage increases, even when they did not originate with considerations of incentive, may also have evoked increased application from the workers. It was said that profit-sharing in particular stimulated the workers to display greater resource, originality, and good will (117). But such effects were purely incidental: the incentive was far removed from the effort of the individual worker and not directly connected with it. And there was no reason to expect any other result from wage increases that originated from considerations other than that of raising the workers' inclination to work.

Nor did the difficulties end even when it was certain that production would increase as a result of higher wages. Production—yes; but at what cost? It required continuous experimentation on the part of manufacturers, in which the level of wages was by no means the only and often not even the main consideration, to discover at what point increased wages meant increased costs and at what point increased costs outweighed, for them, the benefits of increased production.

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[1] In 1906 the wages of 220,000 workers, mainly in the iron and steel and coke and by-products trades, were related to price indices (114).

The conditions in which the decisions had to be taken differed from firm to firm, district to district, industry to industry. Moreover they changed continuously and in any direction, while it was already being found that wages tended to change, in the main, in one direction only. Thus every successive increase in wages, even when made primarily with the view of increasing the incentive of the workers, became more and more of a gamble. Sometimes it was successful, as in the case of the minimum rates fixed for Post Office contracts in 1908—a particularly weighty decision, since it represented one of the first official incursions into the determination of minimum wages: "everybody . . . assumed that these clauses would raise the cost of the contract, and that the Postmaster General must be prepared to face the charge of squandering the taxpayers' money, if anyone, e.g. the Public Accounts Committee, chose to bring it. . . . In the result, however, the contracts were not more costly. So far from the incursion of the State into minimum wages proving expensive to the taxpayer, the Treasury is informed in November 1908 that 'instead of the clause having increased the expense of the Shako contracts . . . the recent tenders were at lower prices than the contracts formerly in force'. . . ." There was similar higgling about the extension of the minimum to the main clothing contracts, the Board of Trade insisting that the Shako contracts were "indefensively high . . . Buxton put an end to it by a decision on 15th December, 1908; 3*d.* for London, 2¾*d.* for provinces. Again costs were not raised" (118). But it was not always so. And whenever trade became strained, a case could be made for the reduction of wages as a remedy (119).

Clearly to the extent that increases in wages could be made conditional upon increased production the risk could be reduced. This immediate dependence tended also to increase the incentive to work: the worker was paid more if he produced more, and only then. For both reasons, of cost and of incentive, there was, during the last decades of the nineteenth century, a great extension of 'payment by result'.

A variety of systems of payment accommodated more or less successfully the variations in types and scales of production and organisation. Under task wages, subcontract, and piecework, earnings were directly related to the amount of work completed by a single worker or a group of workers. Under the first the workmen bound themselves to complete a task in a specified time: if they failed to do so they either lost a proportionate amount in wages or owed their employers the remaining quantity of production. In subcontract and piece-work the price, not the time, was specified. Subcontract was first adopted by the pioneers of railway construction and extended to every operation where it was possible to apply it (120). It succeeded, according to Brassey, in giving "the workmen a personal interest in the performance of an adequate quantity of work in return for the wages received. In the case of the contractor it was especially important to attain this object by making it the interest of the labourer to do his fair share of work, rather than by placing reliance on a close personal inspection of his conduct" (121). Piece-work was most common in manufacturing industry, though the then President of the Board of Trade was undoubtedly exaggerating when he stated, in a speech of May 1876, that 90 per cent. of English exports were made by the piece, including all textiles, iron and steel manufactures, and coal (122).[1]

In some trades only the skilled workmen were paid by the piece; but they set the pace also for the rest of the workers who were paid by time. This system was open to abuse, and in shipyards, for instance, the relationship of platers and their assistants was, at times, described as that of "taskmaster and serf". In one yard, in 1885, platers earned £1 19*s*. per day, while the day wage of an assistant came to 5*s*. Moreover the pay of the assistants depended entirely on the number of hours

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[1] PIECE-WORK PAYMENT IN INDUSTRY, 1906 (123)

	Percentage of all workers on piece-rates	*Percentage of women workers only on piece-rates*
Textiles	51	75
Pottery, brick, glass, chemicals	35	49
Clothing	37	44
Mining and quarrying (except coal)	38	—
Engineering, shipbuilding, etc.	33	52
Food, drink, etc.	—	45
Miscellaneous	—	48
Paper, printing, etc.	—	49

that the platers cared to work: when the latter did not fancy work, "as they often do if there is any sign of bad weather", the helpers lost their wage (124). It was natural that the platers sought to retain their power and resisted, though not always successfully, the introduction of payment by results for their helpers. One shipbuilding company at least managed to introduce it over their heads and increased output as a result (125). In another firm where piece-work had been introduced in 1873, earnings had within one year increased by one-half to three-quarters; at the same time costs had been reduced by 20 per cent., all despite a reduction in hours from 60 to 54 (126). Abuse or no abuse, Brassey, for one, shared the view that piece-work was "one cause of the general superiority of English workmen" (127).

But whatever system of payment was adopted it could not altogether hide its twofold conception. Often the cost and incentive factors were at cross purposes and, since one donkey could not gallop after two objectives at the same time, one had to be accorded priority of aim. It was probably inevitable that costs should gain attention at the expense of incentive with such regularity that the workers came to distrust the animal.

The duality of purpose was particularly evident in the continuous difficulties that were encountered in connection with the fixing and maintaining of the standards of performance according to which payment was to be effected. That standards of performance were fixed in the first place without any clear idea of what constituted a fair day's work only multiplied the danger that standards would be tampered with whenever the resultant wages exceeded the level which was regarded in any district as the traditional or otherwise reasonable standard, or if the employers felt that they could thereby reduce costs (128). In the words of the Ministry of Labour "such a process of cutting prices inevitably caused strong feeling against piece-work and seriously disturbed industrial relations. Also, if generous piece-work prices happened to have been applied to certain work the workers developed the practice of 'ca' canny'; in other words the tendency to cut piece-work prices when they had the desired effect of greatly increasing output actually militated against the operation of the system, because the workers readjusted their output to what were regarded as the habitual earnings standards" (129). In the shipbuilding industry, the trade union laid down how much work was to be done by its members and expected, even though members worked under different conditions and produced different results, that their earnings should conform roughly to an average (130). Altogether, disputes over piecework prices became very common, and in Great Britain employers sought to discover some way whereby with increased output the wage-cost per unit would be reduced without, however, lessening the worker's incentive (131).

For the most part, it remained impossible to reconcile the two objectives. But in the renewed attempts a donkey was bred that ran for incentive with greater frequency, though—so as to satisfy the cost factor—for an ever smaller reward with each successive run. Under the Halsey and Rowan premium bonus systems, payment was no longer calculated on output *per se*, but on the time saved in attaining it (132). Thus with increasing output, wage cost per unit was reduced. The inherent difficulties of ratefixing remained, and there was some danger that when a certain level of output was exceeded, the rewards would be insufficient to induce the worker to continue to give of his best. But the employers were no longer tempted as strongly as before to cut the rates at every opportunity.[1] Rate cutting was, of course, not eliminated. Nor could national agreement between employers' federations and trade unions to regulate the practice solve the dilemma of which, in the main, it was the result (134).

The nineteenth century did not, however, witness the most serious effects of the dilemma. Where the level of costs was of little consequence they hardly showed. Where wage costs represented only a small fraction of total costs—an increasingly common situation as ever more capital was invested in industry—the dilemma could sometimes be solved, albeit temporarily: for increased wage costs per unit of output could occasionally be offset, and sometimes more than offset, by a reduction in overhead costs. In the bottlemaking industry of the 1880's, for example, it was found profitable to pay even progressively higher bonuses per unit of production as the rate of output increased (135)—a procedure that was fundamentally contrary to the conception of premium systems of payment. Again, though the temptation to employers to cut rates would have been reduced if better methods had been employed in fixing the standards of performance, stabilising influences of much greater importance were generated by the comparatively steady expansion of production and sales, and the steady reduction of costs, which were dominating features of the late nineteenth century. For the workers this was an era of an equally steady rise in the standard of living, in which needs, wants and aspirations kept pace with the expanding scope for satisfying them. They may have grumbled that payment by results put a premium on speed at the expense of quality, that it set mate against mate in a mad scramble for higher wages, that it was dehumanising industry, in short that it was "bad" and "demoralising" (136). They may have resisted further innovations of this sort and developed restrictive practices against schemes already in operation. But in the conditions of those years, and in spite of the many strains and stresses, the promise of material gain could be expected to provide the workers with some incentive of tolerable efficiency.

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[1] The number of workers paid under a premium system was not large until well into the twentieth century. According to an investigation carried out by the Trade Union Congress, premium systems of payment in 1910 covered nearly 10 per cent. of the members of the Amalgamated Society of Engineers and was also known among the Associated Blacksmiths (133).

CHAPTER III

THE CURRENT CENTURY

> "But he [the worker] being, on the contrary, an engine whose motive power is a soul, the force of this very peculiar agent, as an unknown quantity, enters into all the political economists' equations, without his knowledge, and falsifies every one of their results."
>
> JOHN RUSKIN—*Unto this Last.*

The recognition of non-financial incentives in the nineteenth century — and socio-economic changes in the twentieth. Investigation and Experiment since 1914: *the inadequacies of research — but two conclusions of overriding importance: incentives the result of the 'total situation' — in which group influences most important. — Two corresponding principles to guide managerial action.*

It was both a condition and a result of the rapid increase in mechanisation during the nineteenth century that industrial executives should have been preoccupied with technical problems. The extended use and the improvement of mechanical means of production seemed to yield dividends of such magnitude as to render all other considerations worthy of only incidental attention. Among these were the non-technical implications of the very increase in mechanisation which they sought so consistently to speed and the impact on their workers *qua* workers of the changes that were slowly permeating the social scene.

For one thing, ever-increasing mechanisation meant an ever-increasing subdivision of tasks. Each worker was doing more and more of less and less. He tended to lose his interest in the productive process as a whole. Adam Smith had prophesied that the results of this divorce would be grave for industry and community alike; by the beginning of the twentieth century the loss from this cause could already be regarded as serious (1). Education, the remedy that Adam Smith had proposed, was still being tentatively upheld as an at any rate partial solution of the difficulty: in enhancing the appreciative powers of the workers, it might "render the daily task more inherently attractive" (2). But it was already being proposed that a different type of education should be added: "To be quite happy in functioning as a trifling part of a system, it is necessary that the worker should grasp the system and identify himself with it" (3). And this type of education could only be the responsibility of industry, not of government which Smith had visualised as the proper agency for spreading the required enlightenment. It implied that the workers be informed of their firm's activities and that, through joint discussion with the management and through being given certain responsibilities in the firm not directly connected with their own particular jobs, they should be encouraged to take an interest in it. That the initial tentative arrangements for such sharing of knowledge should concern welfare, accident and similar ancillary matters rather than production and financial affairs was probably inevitable (4). By means of profit-sharing and, even more, co-partnership some employers indeed sought to include the latter as well; but they generally did so in an attempt altogether to exclude from industry an educative agency of rapidly growing and potentially great importance, namely the trade unions (5). Even though they may not as yet have been able to exercise a veto over employers' actions, the unions were already sufficiently powerful in most of the major trades of the country to advise their members when employers' actions were against the law or, as happened more often, merely against the workers' interest (as they saw it), and to spread such information as they judged to be of value to the workers.

The need, professed by many employers, to combat the disruptive influence of the trade unions should have led them to consider, as a major requirement, a sharp adjustment in the status of the manual worker. That such adjustment was due was indicated, too, by the growing interest shown by the body politic in the lower classes as people: the Education Act of 1870, the substantial extension of public control over health and housing, and continued factory legislation were particularly relevant evidence of this interest in the late nineteenth century. The manual worker was, after all, a person, not an automaton producing x amount of goods through tending a machine for y hours in return for z shillings and pence.

That the conditions in which he worked should therefore be worthy of a human being was one implication of such a recognition. According to Brassey, and he was only echoing statements of Robert Owen made well over half a century before —it would "repay the principals a hundredfold to consider the comfort of their employees at all times" (6). But it was by no means the only or even the most important implication. As human beings the workers were subject to hopes and fears and to all the influences of personal relationships. This opened up new vistas for action by employers.

For more was required than the mere recognition of the important influence of these sentiments on the workers' performance. Feelings are not static: employers could not merely recognise but also foster or allay them, as considerations of production demanded; and they should do so since "the most productive states of mind and feeling of the workmen do not come about of themselves" (7). Thus the hope for promotion was recognised to be an important incentive "if only because that hopefulness of outlook has a marked effect on the attitude of even the humblest worker in any calling" (8); and since this hope would be destroyed if promotion was "other than by merit . . . no principal with any regard to the continued efficiency of his undertaking" would venture upon this course (9). To allay fear, it was regarded as most essential that a feeling of security should exist throughout the establishment, since nothing was more calculated to unhinge the nerves and produce a feeling of recklessness and a desire to change than a constant dread of dismissal at short notice (10). The provision of sickness and pension funds was also useful in this connection. Again, direct encouragement, not by monetary reward but by acknowledgment of effort and praise for good work, was proposed as "an important item of policy. It is one of those inexpensive commodities which it pays to distribute freely whenever a judicious opportunity presents itself. For with many men the want of a little kindly recognition of their efforts leads to profound discouragement and to habits of indifference and negligence" (11); its presence, Brassey remarked in 1873, twenty years before Slater Lewis wrote the above, "would often encourage sentiments of good will beneficial alike to the master and the man" (12).—

The demands which the workers made on their environment over and above their financial reward were thus already known before the turn of the twentieth century. The knowledge came from the published experience of individual employers, who derived it not from scientific investigation and experiment but from the more or less crude process of trial and error more or less crudely recorded and analysed (13); and it is probable that scientific investigation would have indicated the need for more urgent and radical adjustments in industry even at that time.

In the past half-century the changes already in evidence at the turn of the century have made great headway, gaining momentum in their progress; and changing times have generated further changes. Only the fewest were designed specifically to strengthen the workers' incentive to work; with a number it was clear that they would weaken it. Some conflicted with one another and confused the issue. What is certain is that the ever more complicated pattern of change has been mirrored in the ever-growing complexity of the problem of providing adequate incentives.

Mechanisation, for example, has proceeded apace, demanding ever finer subdivision of tasks between different grades as well as different types of workers. But general education has progressed greatly too, with the result that, whilst the workers have gained in knowledge and comprehension has widened, technical development in industry has tended consistently to narrow the front on which these could be exercised. Consequently, the gulf to be filled by the worker's interests in the activities of his mates and his firm and of king and country has grown ever wider.

It has also deepened. For further mechanisation demanded more than a more detailed division of labour. It demanded also that the increases in production, which were its natural result, should be matched by increased demands for the products. This came by no means so naturally. In fact, despite a remarkable shift in resources of all kinds from raising production to raising demand—a shift which itself retarded the advance in total production and offset, in part, the increase in the productivity of the industrial worker—there was at no time the certainty that the desirable balance would be achieved and maintained by lengthening the short leg rather than by shortening the long, by expanding demand rather than by contracting production. Indeed, there has been progressively less certainty as the years passed. Now serious doubt is entertained on two grounds. While it was realised during the nineteenth century that unless the workers' wants increased *pari passu* with rising wages an increase in wages would fail to evoke greater effort, it was generally assumed that wants *would* rise and that any lagging behind was purely temporary. The validity of this assumption is now in question. There are indications that the workers' demands for goods are not unlimited and that, at some stage, they prefer greater leisure to more goods—just as richer people save instead of spend ever greater percentages of their incomes. Tastes differ between individuals in the one group as in the other, and they change with the norms of the times. But the contention now is that wage increases and cost reductions lead to proportionate or more than proportionate increases in the workers' application to their work only as long as the workers are literally "in want": when this stage is passed, the increase is never again proportionate, even if it be there at all. The saying that "man does not live by bread alone" is being relearnt; and while it is only of secondary importance in this connection whether the leisure is taken in the form of less effort while at work or of total absence from work it is indicative that the community is ever more ready to condone and regulate total absence. During the nineteenth century anybody who advocated a general shortening of working hours on grounds other than that it would benefit production wâs regarded as a crank; now it is quite normal to promote a drive to shorten hours on the grounds that it is "socially desirable".

The second ground for doubting that an ever-increasing demand for material goods on the part of the workers would permanently take care of at any rate the greater part of the problem of providing incentives is provided by enhanced realism. The abstracts of total demand and total production hide important divergences. The wants of very poor workers can be forecast with a high degree of certainty. But as workers earn more, as their standard of living rises, they can exercise greater choice in the distribution of their incomes. Not only in their diet, housing and clothing, but especially in the "extras", they can chose between different types of goods and between different grades. Forecasting their choice has become increasingly difficult. Yet more difficult, mainly because of the increased mechanisation and division of labour, has become the adjustment of production to their demands. The chances have increased that they may not want, and may thus not make any effort to obtain, the goods which the industrial machine is ever more intent to turn out.

It has therefore been found increasingly difficult to maintain the workers' wants and their production in equilibrium by trying to expand their wants. Periodically, and each time with greater force, the other method, that of contracting production, has been forced on the economic system—itself made more vulnerable to such disturbance because more rigid. There has been a significant change in the reaction of this symptom of maladjustment. The nineteenth century would have deplored the consequent unemployment in terms of lost output; the twentieth century looks to the lost demand. It is not only due to increased social consciousness but in line with the teachings of the best economists that ever larger funds are distributed among temporary non-producers so that they may at least consume.

Whatever the sentiment, periodic heavy unemployment is a new factor of very great importance. It has strengthened the feeling of insecurity on the part of the workers, of helplessness in the face of a hostile and impersonal system; it has induced them to promote restriction of production in the hope that it would not then outrun demand, though the consequent increase in costs further limited demand; it has also led them to consider as beneficial the habit of saving, of putting something by "for a rainy day", though this limited demand still further. It has also influenced their conception of status. Status is no longer to be defined solely in terms of financial reward and standards of living. In the first place, just as unemployment and poverty, since so often undeserved, have ceased to be coupled generally with reproach—rather does the community now feel a sense of guilt towards its unemployed—so the attainment of higher standards of living has ceased to be an adequate criterion for assessing a person's standing. The financial criterion is deprecated by the workers for instance because there are so many ways of securing wealth which, to them, are of highly questionable social value. Unearned incomes fall into this group, and the workers are prone to widen the term to include the earnings of many persons who man the apparatus set up to stimulate demand and of others in the higher positions in industry. In the second place, security itself has become a criterion of status, one of the reasons for which the black-coated worker and especially the Civil Servant tends to be envied by the manual worker. Education, again, in stressing the things of the mind has undermined the social worth of wealth.

The trade unions have become an important agency for influencing changes such as these and the workers' adjustments to them. No longer is there real hope on the part of employers that their influence can be eliminated by financial concessions made by them, jointly or severally, to their workers. For better or for worse, the unions' interpretations of the changes and their recommendations for meeting them condition the attitudes and practices of a large body of workers. They have advanced from influencing the syllabus of the workers' further education in industry to assuming increasing responsibility for formulating its subject-matter. In drawing the workers together and shaping their attitudes and practices the unions have made them more class conscious. Organised, they have also become politically more powerful, and that at a time when universal suffrage has made it in any case worth the politicians' while to bid for their favour. Such bids have taken various forms: some have been designed to appeal to all workers; others have affected now one group of workers, then another. But few have been sponsored by a desire to increase the workers' incentive to work, and some were bound to decrease it. What matters most in this is that political considerations, often overriding those of industry, have been introduced into the already complex pattern in which industrial managers of the mid twentieth century have to find adequate incentives to work for their workers.

Investigation and Experiment since 1914

Scientific investigation into the effects of these developments on incentives has followed the need for it at some distance. There was nothing notable before the First World War: the experimental work on fatigue undertaken for the Home Office and the investigation into the economic aspects of industrial fatigue carried out by the British Association were of a very preliminary nature and did not yield results of value to industry (14). The investigations by the Health of Munition Workers Committee into the relationship of working conditions, in particular of working hours, and output were the first of real significance, not merely because they yielded results of some importance but also because they promoted the further use of scientific method (15). The Fatigue Research Board was set up under the Medical Research Council to continue the work of the Committee after the war, and by 1921 research into the same or kindred subjects had been begun at several new institutions (16). It has continued ever since. Some ninety reports, covering, in some degree, all aspects of motivation to work, have been issued under the aegis of the Medical Research Council alone, and numerous investigations have been carried out and published elsewhere, in particular by the National Institute of Industrial Psychology (17).

In several important respects the studies have tended to be inadequate. To the extent that they have relied for the collection of data on methods of research that are now regarded as unsatisfactory their conclusions are unreliable. Though very little work has so far been done to validate and evaluate research methods, two conclusions may be advanced with confidence: direct questioning, in particular by means of questionnaires, is of little value in investigating industrial situations, as is also the technique of interviewing when in insufficiently experienced hands. Most investigations have been subject to the one fault or the other, and some have been subject to both.

Again, insufficient attention has been paid to the conditions under which the studies have been carried out. Only very rarely has there been any attempt to assess the factors operating mainly outside the workplace but affecting also the workers within it. Even influences likely to be relevant, as the size of the community in which the unit under investigation is situated, its standard of living, social structure, and spending habits; the diversity of its industries and the competition for the workers' labour; and the types and levels of unemployment obtaining at the time of a particular investigation, have been ignored. The conclusions of any investigation are, in any case, valid in detail only in the particular situation from which they have been drawn. But in so far as they fail to take into account all relevant factors they are open to error and misinterpretation.

To a varying degree the same criticism can be levelled at the basis upon which factors inside the workplace have been examined. Too often the range of the investigation has been unduly limited. From this shortcoming has sprung the habit, still persisting in some quarters, of seeing simple correlations between this or that factor and this or that result, and of believing in them when found. Three decades ago, problems of incentive were conceived purely in terms of physical fatigue, a relatively simple and special study, and early investigations, such as those of the Health of Munition Workers' Committee, were conceived almost wholly on a technical basis. The Fatigue Research Board, the Committee's immediate successor, was set up "to consider and investigate the relations of the hours of labour and other conditions of employment, including methods of work, to the production of fatigue, having regard both to industrial efficiency and the preservation of health among the workers"; it was not until 1927 that the Board's name and terms of reference were modified so as to acknowledge the need to widen the basis of investigation.[1] In the meantime, one study, for example, had concluded that a knowledge of the temperamental characteristics of a worker was sufficient to indicate a general suitability for repetitive work (18), an idea that has since been found, by the same body, to be subject to so many exceptions and limitations that it is of little value (19). The investigators at the Hawthorne Works, too, started off with the notion that "a simple change in working conditions would be followed by a simple response in output, apart from the attitude of the workers towards the change" (20). Only after the twelfth change of working environment in the relay room (when they returned to physical conditions as they had been before the investigation had started) had resulted in yet another increase in production, was the simple approach abandoned.

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[1] The name was then changed to Industrial Health Research Board.

Certainly, owing partly to the small total volume of research and partly to deficiencies in method, no more than a start has been made on the research that needs to be done. Little is so far known even about such matters as the advantages and disadvantages of the two-shift system and the best lengths of continuous work in one spell, simple though they seem when compared with the influence of the many other factors that influence the workers' will to work (21). And most of what is known must be regarded as provisional. Such are the normal teething troubles of all attempts to acquire what is essentially new knowledge.

Two conclusions can, however, be drawn from existing knowledge with absolute safety, and both are of fundamental importance. The first is that the incentive to work is the net result of a large number of interacting factors. As was noticed by Professor Sargeant Florence soon after the First World War, it is impossible in this field, as in medicine, to draw a precise line of demarcation even between physical and psychological factors; "intensity of industrial activity is probably determined by a *varying* willingness to work, as well as by immediate or 'long run' capacity. Hence fatigue is difficult to separate from the other bodily and mental states. . . . The two categories form part of one integral system and the interrelations between them are *manifold*" (22). About the same time Dr. May Smith, of the Fatigue Research Board, investigated the problem of repetitive work. During the course of the study she spent some time doing similar work in two factories: "in the one there were many complaints of dullness, in the other none. [In the one] no one apparently took any interest in the workers, there was no *esprit de corps*, and a general slackness prevailed; to get the week's money was the only interest, and that is bound to be a fitful interest. In the other there was not only real interest in the work, in the accumulation of it as the day wore on, but also the desire to win the approval of the authorities and interest in the many social activities binding one to another". She concluded that "repetitive work is a thread of the total pattern, but is not the total pattern" (23).

After several years of field study the investigators at the famous Hawthorne experiment subscribed, almost word for word, to the same conclusion: "Repetitive work is only part of this total situation, and not the situation itself" (24). They finally underlined the complexity of the work pattern as the most important of their findings: "every item and event in the industrial environment becomes an object of a system of sentiments. According to this way of looking at things, material goods, physical events, wages, hours of work, etc., cannot be treated as things in themselves" (25). None of the results, for instance, gave the slightest substantiation to the theory that the worker is primarily motivated by economic interest. The investigators could more logically attribute the increase in efficiency to a betterment of morale than to any of the alterations made in the course of the experiment (26).

The same conclusion has been reached on the negative side. Grievances, however singularly expressed by the workers, are rarely if ever confined to a single cause. In most cases, dissatisfaction is the general effect of a complex situation; things in general are unsatisfactory (27). In fact, complaints as expressed by the workers are sometimes entirely unconnected with the real grievance. During one investigation, for example, complaints about the works canteen were widespread, but had, in the end, to be regarded as completely unfounded. The workers were clearly not aware of the relationship between the real and the imaginary grievances: the latter merely provided issues over which to express a general sense of grievance (28).

Thus a large number of factors, positive and negative, weak and strong, arising within the factory or outside it, are of importance to the study of incentives. But through nature and nurture, human beings differ from one another; and they are subjected to varying influences outside the workplace even if not within it. There is no reason, therefore, to expect them to react in the same way to the same stimuli. There is a whole network of factors for each worker, of which two or three stand out prominently. Again the effectiveness of this or that set of stimuli on the worker varies over time, just as the many factors vary which influence the work at and away from work. A certain set does not remain supreme, unchanged throughout a year, or indeed a week. One day the wage return may be the strong attraction of a job, another day the type of supervision; or, in the afternoon, the working conditions may make a strong appeal (29). It is clear, therefore, that every discussion of an isolated incentive is to a certain extent a dangerous misrepresentation. A very complex bundle of motives make a person do something; and although certain incentives may appear to be predominant, no single one can ever be made entirely responsible for a given line of behaviour (30). It has been said that a typical group of 200 people interviewed in a firm will mention between them some 300 different suggestions on their motives for work (31), and there may be many more.

The conception of incentives as a dynamic group of factors, changing from individual to individual and from day to day, is even theoretically a complex one. The Chief Inspector of Factories thinks that its examination requires from time to time the knowledge of "doctors, engineers, chemists, physicists, psychologists, welfare and personnel experts, dieticians, and other specialists" (32), a truly frightening proposition. Hence the persistence of attempts to arrive at simple correlations. Hence also the continued endeavours to divide the subject into its 'component parts'. Not only is such division bound to be arbitrary. There is no guarantee that the parts will be much less complicated than the whole. Little purpose is served, for instance, by a division of incentives into, first, personal incentives, which are generally expressed in terms of cash; second, intangibles, derived from leadership, working conditions, etc.; and, third, "purpose of life and work" (33), of which especially the last defies definition. More suggestive is the rough division used by F. C. Hooper in a recent broadcast talk (34). We work, he said, 1. because we've got to (unvarnished self-interest), 2. because we want to (love of accomplishment), 3. because we enjoy the association it gives (love of affiliation), and 4. because of the love of others. But he made it quite clear that he was being selective and that the reasons were in fact very mixed. Who would say, for example, that 4 did not go with 1, or 2 with 3? Professor Sargeant Florence, writing some twenty-five years ago, was as far as this, and he only elaborated Wagner's five-fold division, propounded several years earlier, into altruistic promptings of conscience, responsibility, etc.; cash; honour, approbation, fame; pleasure in activity and occupation[1]; and fear of punishment, or reward in some other form than cash (35). Subdivision is harmless as long as it does not induce the user to neglect the total situation in favour of the partial one. Since this danger is very real, that is the most that can be said for it. It is indicative, at least, that the institutions most closely concerned with the study of incentives to work have desisted from attempting explicitly to divide it up.

In brief, the first conclusion of scientific study in this field confirms that the worker is a human being. The second follows from the first: it is that the worker, being a human being, is also a social animal. As happens in all social activity, whenever people join in work they tend, subconsciously and informally, to develop relationships, and through influencing and adjusting one another, to evolve common attitudes and common practices towards their work. To the extent that they thus merge them, the individual workers lose their separate identities; what emerges are group attitudes and group practices.

Many factors determine the extent to which the merging of separate identities takes place. Some people are more sociable than others or more easily influenced. The length of time for which the members of the group work together is another important factor. Salesmen roving the countryside on their own are not likely to evolve common attitudes as easily or in the same way as a bricklayer and his mates who work together all the time. The type of work on which the workers are engaged is also of importance in this connection. A toolmaker absorbed in devising an intricate piece of mechanism will tend to pay less attention to other people, even though they may be working within a few yards of him, than a girl on a repetitive job that, for most of the time, does not engage her attention. The importance and urgency of problems affecting all members of the group present an important factor of a different kind. The members will tend to draw closer together in the face of outside influences that seem likely to affect the attitudes they hold in common. The prospective dismemberment of the group presents such an occasion for further unification; common achievement presents another.

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[1] Sargeant Florence divided the conception of pleasure further into pleasure in (*a*) the form of activity itself; (*b*) in performing the activity efficiently; and (*c*) in the objects acted upon or in the accidental circumstances of an occupation, e.g. sociability.

Common attitudes vary, too, in scope, according, for example, to the physical circumstances of the work or to the influence of the leaders who are thrown up, informally, as best representing the feelings of different groups. A crowded assembly room will tend to have larger working groups than a chemical works in which it is possible to walk for some hundred yards without encountering more than two or three workers. A leader whose personality and views "draw" may well influence a larger group than the one whose personality and views are not so attractive. But, of its very nature, a group will be no larger than will enable its members to maintain close and continuous contact with one another. Thus twelve to fifteen probably represents the maximum membership; additional workers will tend to break away and form new groups. This is of fundamental importance: the working group does not expand *pari passu* with the organisation; the growth of an organisation implies a multiplication of working groups.

That a worker is a member of a group and shares with his mates certain attitudes and practices is not contradictory but complementary to the fact that different workers tend to react differently to a similar set of stimuli. All it means is that group influences are part of the set; what is quite clear that they are almost invariably of great importance.

In America, where, largely at the instigation and under the guidance of Professor Elton Mayo, by far the greatest amount of work has been done on group attitudes and practices, it has been advanced that they have the most important single effect on output (36). It is certain that restrictive practices in industry, for instance, are almost wholly a group phenomenon (37). Of this industrial strife represents a particularly striking manifestation. At a recent unofficial strike of Glasgow dockers, as long as the vote for or against the continuance of the strike was taken by show of hands, the workers were in favour of staying out; a vote by secret ballot promptly reversed the decision (38). Everything has pointed to the conclusion that the approach to a real understanding of human situations in industry must be made by way of group psychology and a study of the structure and interrelations of industrial and social groups.

J. M. Fraser has summed up the total position as follows: "Each individual is seen to be compelled by inward urges, some economic, some directed towards recognition of status, and some expressing a desire for membership of a working group. Each individual reacts at the same time to the physical conditions of work and to the social environment in which he finds himself. These pressures, both internal and external, make themselves felt upon him; some may be steady and constant, while some may vary from day to day; some may tend in one direction while some may tend in another; some may be of great urgency while others may be relatively unimportant. Somewhere in this pattern of forces the individual must find an adjustment or point of temporary equilibrium. As the pressures change so the adjustment must change; and we are faced with a dynamic pattern in which different individuals may reach different adjustments in the same environment, while day-to-day changes in both individual and environment lead to continual movement of the points of temporary equilibrium" (39). Some of these influences are outside the scope of direct managerial control, or only very partially subject to it. Those exercised by politics, national and international economics, and the home backgrounds of the workers are normally among the first; the workers' education and their security among the second. It is management's job so to influence the latter and the numerous and more important factors which are largely or wholly under their control, that the balance of influences affecting the workers is as heavily as possible in favour of greater work.

From the two major conclusions follow two guiding principles for management. Since each worker is influenced by a number of stimuli, since the stimuli that are effective for one worker are not necessarily effective or as effective in the case of another, and since their influence varies even for the same worker over a period of time, the more comprehensive the range of incentives in operation at any workplace the more likely is management to succeed in its endeavour to raise output. Smith may be interested mainly in earning money to save up for a holiday, while Jones only feels satisfied and keen if he is on "a good job" or if he has had "his say" in the affairs of the workplace. After lunch Smith may feel like taking it easier, but thinks the better of it because he does not want to let his mate down, who is waiting for his work, or because there is a target to beat, or because he will be let off early if he works hard and finishes his job. But the range needs to be comprehensive in depth no less than in width. Inevitably persistent deterrents to output, for example, must be more than merely offset by incentives if high output is to result. Good conditions of work may outweigh lower remuneration (40), interest in work more than counterbalance bad conditions (41), appreciation offset technical obstacles to output, a strong social purpose convert what might have become grievances into spurs to further effort. A comprehensive range of incentives will have stimulants to offer to the workers at all times. It implies a total conception which leads management to take into consideration the likely effect on its workers' will to work of all its actions and omissions. The coherence of policy that should follow from this tends at the same time to reduce uncertainty and inspire confidence, and so make changes and adjustments easier.

It will not, however, have the best results unless effective steps are taken to prevent what may be termed 'monotony of incentives'. A wide range of incentives enables the worker to deal with this problem by paying heed to different incentives at different times. But he must also be induced to do so. For this, each incentive needs to be occasionally dusted and high-lighted so as to remind the workers that it is still there. A varied emphasis on one incentive or another will also foster a cohesion, an *esprit de corps*, among the employees and groups of employees in the factory. Special appeals and targets to mark particular events have their use. But they are not substitutes for changes at the everyday level, for the simple reason that if special occasions occur too often they cease to be special and, merging into the general run of events, lose force; workers become inured to exhortations for special effort. What is needed is changing emphasis from time to time on one or other of the incentives that are normally applied. A week's competition between groups of workers might supplant awards for high individual output, to be followed by a suggestion fortnight, a production spurt to attain a certain target by a certain date, an extra holiday for maintaining that level of output for a month—there are innumerable variations. It is not news that "we quickly assimilate items in our surroundings into a general whole, so that they cease to attract any special attention" (42). Commercially the principle of frequent change is generally accepted: illuminated advertisements, for instance, are switched on and off. On what grounds should it be believed that the whole attention of a worker can be retained continuously, week after week, month after month, by the same unchanging incentives?

The second principle reveals organisational implications. Since the attitudes and practices of most workers are determined largely by the influences exerted by their respective working groups, it is in management's interest to gear group influences to higher output. Group bonuses, group targets, inter-group competitions are obvious examples of incentives deliberately designed to appeal to the group rather than to the workers individually. But their success is marred if the groups to which they appeal are not the same as the informal working groups. Again, unless the pattern of supervision matches the pattern of informal grouping, the workers tend to be subject to conflicting influences and loyalties, and the supervisors will not be able to exert their influence so effectively in favour of greater production. The pattern of working groups needs to be recognised, in fact, as the proper basis for organisation.

What combination of incentives, whether individual or group, will yield the best results at any particular workplace depends of course on the particular conditions obtaining inside and outside it at any particular time; and since these change, both investigation and consequent adjustment must be continuous. An additional reason why this must be so is that some time always elapses before it is possible to assess the results of change and adjustment on the workers' will to work. The Health of Munition Workers' Committee already noted that several months passed before the workers found equilibria which accommodated a deliberate change in the physical conditions of work (43). The more complicated the change and the adjustment, the more complex already the pattern of influences affecting the workers jointly or severally, and the more resistant the rest of the pattern, the greater the delay is likely to be (44). Records of performance, of output, absenteeism, labour turnover, strikes, and accidents, are a guide to investigation. Workers' opinions are valuable. The mechanism through which the situation can best be kept under review must necessarily differ from place to place. In a large factory, for example, it may be useful to supplement direct contacts between management and men by some system of periodic interviewing.[1] But none of these methods or the many others of the same kind are really adequate. Performance records show certain crude results; they cannot throw any light on what caused these results. Workers' suggestions, complaints, opinions of all sorts may well be indicative. But a great deal is lost if workers have to go out of their normal way to report them: they will, for instance, only report changes and adjustments when these have grown and crystallised; they are also apt to overrationalise their observations. Moreover, there is no guarantee whatever that they will use the official channels provided for communication at that stage; indeed, there is every likelihood that they will, instead of using them, regard them as wholly inadequate.

The job of detecting and notifying changes and adjustments at all adequately—that is accurately and in detail, early, and continuously—can in fact only be done by persons who are not merely in close contact with but also accepted by the working group. They must be able to move about easily among the members of the group and talk to them without causing a stir, that is without upsetting the situation under investigation. None but the immediate supervisors can qualify for the first requirement. So that they should qualify also for the more important second it is necessary not merely that they be accepted *per se*, but that they be accepted as persons pursuing a managerial function. And this is possible only if management's purposes are accepted by the group.

Adjustments needs to take place very largely at the same level if they are to be sufficiently detailed, rapid and continuous to accommodate the changes. There consultation can take place easily and usefully, suggestions be accepted, grievances settled, personal contact maintained and generally such incentives devised as most closely fit the requirements of each worker and of each group of workers. And at that level too industry must experiment with a variety of incentives. "In social management, as in medicine, there are no patent medicines and each case demands careful analysis" (46). The value of experimental investigation cannot be over-emphasised Only through investigation, humbly and painstakingly done is it possible to expand the small knowledge of industrial situations most conducive to enhanced production and of the organisational patterns most suited to provide them.

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[1] As the Hawthorne investigators point out, however, "it is probable that a relationship of mutual confidence must exist between employees and management before a programme of this sort can succeed satisfactorily" (45).

PART II

Incentives Applied in Industry

CHAPTER IV

THE CARROT AND THE STICK

> "If we are to get production, and the operative is to be offered incentive, we see no other way than through the pay packet."
> President, Federation of Master Builders,
> 19th March, 1947 (1).

Fear of unemployment the only new 'incentive' — its deterrent effects on output — no benefit as long as discrimination inadequate. Financial Reward: *multifarious and often contradictory considerations affect the determination of wages — managerial efforts to reduce wage-costs — their lack of success — the connection between work and wages anything but clear — its declining importance in modern industry — and the reduced will of the worker to make use of it — the scope for payment by result.*

INDUSTRY has paid little heed to developments in the past half-century. It has very largely ignored the growth of scientific knowledge relating to incentives. To the best of its ability it has shut its eyes also to the social and economic changes that have taken place. And it has done so on the tacit pleas that the changes are extraneous to industrial affairs and hence of no concern to it, or that industrial practices are sacrosanct and that it is consequently the changes, not they, that require readjustment. According to the latter argument, the decline in the workers' will to work is really the inevitable consequence of the failure to stop and reverse the changes; and it is only a logical advance from this position that industry should limit what appears as an attempt against hopeless odds to salvage the workers' efforts, and concentrate instead all its forces on technological improvement.

As a result the incentives on which industry fastens its fading hopes of enlisting the workers' will to work are virtually the same as those applied in the late nineteenth century. The proceedings of the Conference on Industrial Remuneration of 1885, for instance, could safely be reissued as of 1948. Papers might have to be added on merit rating and national wages policies. But everything else can be found already there in familiar form: discussion of wages anomalies and rate cutting, of exploitation through systems of payment by results and consequent loss of satisfaction in work; and also proposals for more joint ownership, for greater participation by the workers in management, and for more humane treatment of workers addressed alike to industry and State. The only major new weapon in the employers' armoury would in any case not be even as much as mentioned at a joint conference: it forces the worker to choose between working harder and leaving the firm. It is the employer's big stick: his threat to throw the worker out of work. In post-war Britain it has suffered an eclipse. It is the hope of the political parties, the workers and a number of employers that the eclipse may become permanent. Other employers hope otherwise. Without unemployment they see no solution to the problem of finding incentives for workers in industry.

Many factors condition the workers' reaction to the threat of unemployment. Their chances of finding other work and the provision made to help them over the various difficulties entailed by unemployment are important among them. What matters most, however, is that their interpretation of the threat varies according to their interpretation of its cause; and inefficiency does not seem to the workers to be the only or even the main cause of unemployment. When they believe, for instance, that the market sets a limit to the amount of work to be done and that unemployment ensues as soon as that limit is passed, they tend to restrict output; when, on the other hand, they feel that if they become unemployed they have only themselves to blame they have an incentive to improve their work. The efficiency of the employers' weapon depends on the relative strengths of such opposing factors and the possibility of segregating them.

It is impossible to give an accurate estimate of their relative strengths, even for single industries or individual firms. What is certain is that the fear of general unemployment leads to a form of mental disturbance and distraction which frequently interferes with productive efficiency and that, as a study of the cotton industry emphasised, unless it is entirely removed, maximum efficiency will never be attained (2). At the Hawthorne works output dropped in the last year of the experiment, when the operators first began to fear that the business depression would lead to a reduction in the available work (3). It is even more indicative of the strength of the fear that, though the workers were paid by the piece and might have been expected to raise their output and earnings to the maximum level for the remaining period of employment, output declined further when the termination dates were announced. Good workmanship is not compatible with constant fear; and it is a mistake to believe that the feeling of insecurity in work stimulates the competitive spirit (4).

The number of workers to whom this does not apply is small and declining. At most it comprises those engaged in work to which no time wage is attached, as in sections of the clothing and leather industries, i.e. where workers are paid wholly by the piece. For them the belief that the amount of work to be done is strictly limited may even act as a spur to greater output, each worker hoping to obtain the maximum share of a limited total. The interest of the great majority of workers who enjoy a time wage is diametrically opposed to theirs. It is to 'stretch' the work over as long a period as possible in order to draw the time wage even if little else.

The scope for 'stretching' varies between different industrial processes and with the efficiency of managements. It is least on continuous processes of which the speed is fixed by technical considerations; newsprint manufacture may serve as an example. It is greatest in hand processes. Since the number of workers engaged on the former type of operation is very small, and since in any case only a minority of workers operate production machinery, the scope for restriction of output is likely to be large. It is not possible to separate restrictionism caused by the workers' fear of unemployment from that due to other causes; but, as already mentioned, various estimates put the increase in total output that could be achieved in the United States from the cessation of all restrictive practices on the part of the workers at between 25 and 50 per cent. (5).

The indirect effects of the fear of unemployment on output are also very serious. As an American observer phrased it, "let a man live for years under the daily pressure of the narrow margin between job and no job, let him observe, day after day, that when men work it appears to mean that for exactly that reason other men cannot work, then the most important factor in his whole life is sure to be the conviction that there simply isn't enough work to go round" (6); he will, for instance, strenuously resist all steps, such as installing labour-saving equipment or enlarging the number of workers who compete for the same work, which seem to reduce still further the amount of work left for him to do. In British coal-mines, according to the Reid Report, "mechanisation, though seldom encountering active resistance, was not generally received by the men with enthusiasm, no doubt in the fear that more machines meant fewer men at a time when unemployment was widespread; and where machinery was installed, its potential savings seem largely to have been dissipated by a quiet but effective determination that the number of men discharged should be kept as low as possible. This must have been a contributory cause of the overstaffing of many of the operations at the coal faces" (7). Under such conditions the worker will obviously refrain, too, from partaking effectively in joint consultation on matters of production.

Each workers' organisation necessarily tries to allay its members' fears of unemployment in its own limited way. The rigid lines of demarcation between workers of different types and degrees of skill, which are in many cases quite unsuited to modern methods of production, represent one of the means at their disposal to resist technical and organisational change. The urge towards shorter working hours, again, is connected, just as it was in the early thirties, with the general tendency to unemployment caused by mechanisation (8). One of the grounds on which workers object to an extension of shift working in industry is that production would be speeded up with the result that more people would become unemployed (9). That the reduction in costs would render the opposite result more likely is significantly ignored. Even before the cut in capital expenditure announced late in 1947, restriction of output in the building trade could be attributed in part to the workers' fear of working themselves out of a job (10); and the cut immediately caused such restrictions to become much more widespread—a particular instance of the effect which irregular supplies of fuel and raw materials have had on the minds of workers in a number of industries (11).

In short, the level of unemployment at any time is a quite inadequate measure of the fear of unemployment. This is so not only because it is a dangerous habit to confine attention to global, national figures, so that the districts where the percentages of unemployed are considerably higher than average tend to be forgotten. It is the prospective rather than the current incidence of unemployment that weighs in the workers' assessment of their chances of having to go on the dole; and in forecasting future trends there is room for a range of opinions (which, incidentally, will tend to vary in width with the degree of ignorance on the part of the workers). In 1942, at the very height of the war and when the unfortunate call-up of skilled miners into the Armed Forces was already having serious effects on coal production, the Select Committee on National Expenditure reported from the coal-mines that "it is difficult to persuade the men that the present drive for production is likely to be a lasting one" (12). Perhaps the clearest indication of the durability of fear even in the face of the great volume of official propaganda stressing the good prospects of employment in general, and of certain industries in particular, is provided by the difficulties these very industries are experiencing in trying to recruit additional workers. This applies for instance to the cotton industry (13). The fear is often sufficiently potent to offset the attractions of skilled and interesting work. The employees of the jewellery trade, for instance, do not encourage their children to enter the industry because of the ingrained feeling that the industry has no security to offer its workers (14). Teachers of local elementary schools also discourage children from entering trades in which unemployment was proverbial in the past. In one way or another fear of unemployment spreads from one locality or industry to another, is handed on from each generation of workers to the next. Once present it feeds on every likely or unlikely occurrence and rumour into which it might be possible to read an indication of an imminent return to the dole. Fear of unemployment still occupies a high, perhaps the first, place among the influences on the minds of workers in Britain as well as in the

United States (15); yet a feeling of security in work is probably a prerequisite for the effectiveness of incentives to work.

For the present, at any rate, the deterrent effects of the fear of unemployment far outweigh its effects as an incentive. It need not be doubted that the knowledge that he may be replaced by a more efficient worker will often act as a spur to an unsatisfactory worker,[1] and he may well improve on his performance, particularly in the way of discipline, which is often invoked as illustrative of the good effect of the fear of unemployment. Nor is there any doubt of the tendency in the past for bad timekeeping and other signs of industrial indiscipline to become more prominent in times of good trade (17). For instance, the number of cases coming before the Courts of Referees for refusal of unemployment benefit on the ground that the workman was dismissed for misconduct or left his work voluntarily without good cause rises and falls regularly with the employment percentage in the trade cycle (18). But even in 1937, at the height of the last pre-war trade cycle, not more than 2½ per cent. of the total number of claims was disallowed, and a proportion of these came from men who would be the first to lose their employment in a depression. These 2½ per cent. may steal the limelight, but their influence on output, one way or another, is not likely to be very great. Nor can it be assumed that all workers whose performance is below average are able to improve on it, a doubt that becomes increasingly important as the age composition of Britain's working force becomes less favourable. For raising the efficiency of old and otherwise handicapped workers, fear of unemployment holds no advantages at all.

In other connections, too, the fear of unemployment is a singularly blunt instrument to deal with the problem of the unsatisfactory workers in industry. Many of them will just not be afraid in the absence of unemployment on a substantial scale—and this would have repercussions elsewhere quite out of proportion to the problem it is supposed to settle. They must not only stand in danger of losing their jobs. They must also know that it would be difficult for them to find others or at least others as good as those that would have to leave. Theoretically, the dismissal of a worker from his trade would seem to meet the latter requirement, without entailing the general disadvantages. But, even ignoring the many practical difficulties involved in converting the suggestion into practice, such a proposal assumes that the worker cannot easily acquire proficiency in more than one industry; and this assumption is becoming progressively more difficult to maintain, especially in connection with the least skilled types of workers among whom lack of discipline tends to be most in evidence. The problem of the unsatisfactory worker in industry is a serious one in times of a high level of employment: if he stays he may have a bad influence also on the performance of his mates; if he goes the firm is short of a badly wanted worker. And there is no sign that the wartime attempts to deal with the problem, as, for instance, by fining and police-court prosecutions, pointed the way to a permanent solution.[1] But to try to solve it by reducing the level of employment would be akin to cracking a nut with a steam-hammer.

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[1] The rates of output of individuals doing the same type of work in the same factory, for instance, sometimes ranges from 75 to 125 per cent. of the average, and occasionally from 50 to 150 per cent. (16).

Again, general unemployment in mid-twentieth-century Britain would not conduce to a clarification of the connection between inefficiency and unemployment, for the good reason that there would be no clear connection. Yet clarity on this issue is essential if unemployment were to be deliberately punitive. The fact is that even as it is workers become unemployed for a wide diversity of reasons—shortages, decline in certain industries, temporary dislocations—which may have nothing to do with their performance. Nor has it been common practice in industry even to try to introduce some correlation between inefficiency and insecurity. Right from the very earliest years of the working life of large numbers of workers there has been heavy and deliberate wastage, through blind-alley work (20); through the employment of workers only until they attained adult status and pay (21); through seasonal unemployment (22); and through the alternation of bursts of frantic activity involving the working of overtime and of relative inactivity at short time and short pay. According to one works manager, many firms used to take a most favourable view of the constant stream of comings and goings in their workshops; "labour turnover was, in fact, regarded as a healthy sign of lively management" and staff were engaged and discharged with little hesitation (23). Even now, and even where a dismissal takes place on the grounds of indiscipline or inefficiency, the connection between cause and effect is not always designed to become obvious to the remaining workers. The prerogative of dismissal is often entirely the foreman's and the worker has only rarely facilities for appeal: he can thus readily assume that his dismissal depended as much, or more, on the personal likes and dislikes of the foreman than on any action or omission on his own part. The result is that to many workers unemployment does not seem to be the outcome of inefficiency at all and that they are able to associate it, even against all reason, with the state of the market, an impersonal force, or the whims of the employers, in short, with anything rather than with their own performance.

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[1] In Russia, punitive action has been far developed: a worker guilty of one day's voluntary absence may be dismissed, deprived of housing, or be made to forgo rights and benefits acquired in previous employments (19). Even unpunctuality may lead to prosecution under the Criminal Code, with possible sentences of from two to four months' imprisonment.

It is indicative of the very special regard in which the threat of the sack is held by management that, while adequate discrimination between the deserving and the undeserving is generally assumed to be a *sine qua non* of sickness and pension schemes and other methods of providing some security against the hazards of life, and is then safeguarded by the workers' right of appeal, it is only very rarely present, and even more rarely safeguarded, to provide security of work. Yet insecurity in work is regarded in workers' homes as the greatest hazard of all (24). The vast majority of workers are still liable to be dismissed at a period of notice not exceeding one week, which "cannot give to any worker that sense of real security he needs", and apart even from any right of appeal, their dismissal is not normally regulated on the basis of definite and known policies (25). Employers' wishes for a million unemployed and their habit of refusing even to discuss matters of redundancy are hardly conducive to allay the general fear (26). Insecurity can be an incentive, but only if management can discriminate effectively against the inefficient.[1] In its extreme form it is a crude weapon even then: its use is successful if the worker chooses to work; it fails if he chooses to leave. And it is certainly the employers' last. That they should so frequently be on the verge of using it measures the failure of the promises of financial reward to induce the workers to work.

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[1] Some of the recent agreements instituting guaranteed working weeks in a number of industries initiated some discrimination. The agreement for the

FINANCIAL REWARD

The incentive value of wages is only one among several considerations upon which the level and methods of remuneration are determined. And it has declined since the nineteenth century in relation to the considerations of the bargaining strength of the workers, the cost to the employers, the desire for nation-wide uniformity and the effects on the workers' status. Moreover, as always when there is a shortage of workers, another consideration has lately come to the fore: namely that of the likely effects of wages on the recruitment of workers and their distribution between industries.

Bargaining strength and costs, not incentive value, are the main considerations. Whenever trade has been good and labour scarce the workers have asked and generally obtained increases in wages; the wartime and post-war rises are only the latest and keenest examples in a long series of upward movements (29). With equal regularity the employers have pressed for, though not quite so regularly attained, substantial wage reductions whenever trade has been bad and labour plentiful. The Mining Association, for instance, recommended a reduction of piece-rates before the Royal Commission of 1926, to ensure that earnings would remain the same though hours were lengthened, and contemplated the necessity of reducing wages still further "if the industry was to pay its way" (30). Similarly, wages in other industries have been reduced during each slump in trade, sometimes officially, sometimes unofficially, openly or by devious methods, with or without the workers' consent (31). The former of each set of alternatives have applied to most wage increases; wage

pottery industry, for example, specifies that guaranteed wages will not be paid to a worker who is persistently late or absent without good cause and has been informed by his employer in writing that he is being disqualified (27), and the agreement for the hosiery industry specifies a lower minimum wage for workers whose piece-rate earnings fall below a certain standard for a specified period (28).

reductions had usually to be managed on the latter. There are exceptions to both. In respect for the egalitarian spirit of the age, accepted by trade associations, trade unions and Government alike, many employers who wish to pay higher wages than are generally paid by their colleagues do so without publicising their defection; a façade of "special allowances" often serves to hide it. Agreed wage reductions are also known. Between 1921 and 1923 the Joint Industrial Council of the cement industry, for example, managed to agree on no less than ten successive reductions totalling 28*s.* per week for each worker (32). But this is not normal. Not even arrangements whereby wages vary, up as well as down, with the selling price of the products—a feature at one time common in wage agreements covering the heavy industries (33)—suffice to make the workers agree to wage reductions without considerable resistance: they tend to allege, in the first place, that the employers do not know their business, since they seem to be unable to obtain higher prices, or that they are deliberately falsifying sales returns or conducting dubious transactions. In the coal industry, for instance, the trade unions stated before the Samuel Commission in 1926 that the mine-owners were selling coal at "uneconomic" prices to subsidiary companies, an allegation incidentally which, at any rate by 1936, the owners had done nothing to answer (34).

Failing both workers' agreement and efficient automatic downward adjustment, it is natural that employers should be left to their own devices to achieve the maximum wage reductions with the minimum of trouble with their workers, and that their methods should be devious and no time should be wasted in attempts to obtain the workers' consent.

Refusal to pay wages for periods when the worker has to wait for work and the payment for overtime work at normal hourly rates are two comparatively inconspicuous ways of reducing wages. The former has been regarded as the commonest abuse to be found in connection with wage payments in the clothing trade and seems to have been prevalent also in the hosiery industry (35). Regarding overtime work, a Board of Inquiry investigating conditions in the Yorkshire wool textile industry in 1936 found it necessary to state categorically that the normal weekly working hours in the industry were forty-eight, and that any hours worked beyond these hours should be regarded as overtime and paid for as such (36). The deduction of excessive sums for materials where these were paid for by the workers or as compensation for damage to work or machine attributed to them was also still "fairly common" in the clothing industry of only a few years ago (37). Again, some firms employing the Bedaux system of payment were reported in the early thirties to be appropriating for equipment the 25 per cent. which was supposed to be allocated to indirectly productive labour (38). Others have apparently sought to compensate themselves for having to pay fixed basic wages to their staff by reducing their bonuses (39).

Here again methods differ. As is appreciated, for instance, in the engineering industry, cutting bonus rates is easiest as long as the rates are temporary: they can then be altered without elaborate negotiation. There is thus an inducement to management to retain this flexibility as long as possible (40). Once the rates have been agreed as permanent, joint agreements covering certain trades have to be contended with before rates can again be changed (41). For nearly half a century agreements covering the engineering industry, for example, have specified that prices, once they are fixed, can only be altered in the event of an obvious mistake in calculation or of a change in the materials or means and methods of production. Many of these clauses are sufficiently ambiguous to leave plenty of scope for management to continue to cut the rates if it so wishes and dares; and the urgency with which such guarantees were reviewed and renewed during the early part of the late war indicated the extent to which management must have until then been inclined to exploit gaps in the agreements. One method is that of deliberately making slight alterations in materials or mechanisms, and then proceeding openly to cut rates. This practice has returned since the war, with the time ended when large bonus payments did not greatly worry managements or, as on a cost-plus basis of contract, even benefited them. Another line of procedure, suitable as yet, however, only to the small number of processes in which the machine sets the pace for production, has been to fix production standards on the basis of output attained when a system of payment by results is in operation, and then to change over to payment by time (42).

But the possible reductions in bonus are small compared with those that can be attained by cutting basic wages. Trainees, young workers and women workers are most prone to suffer from this. Learners are often paid at rates lower than those agreed between the two sides of the industry (43), money promises to young workers are not kept (44) and women workers are paid at rates lower than those paid to men on similar work even where it is the custom of the industry not to discriminate between them (45). Occasionally unofficial reduction of basic wages has been so widespread that the structure of collective bargaining of a whole industry has threatened to disintegrate. This happened, for instance, in the weaving section of the cotton industry during the slump of the 1930's, when an Act had to be passed by Parliament to enable statutory effect to be given to rates of wages agreed between representative organisations in the industry. This Act was renewed annually throughout the thirties and early forties and was reasonably successful in underpinning wages (46). But there are sufficient loopholes in many official wage regulations to allow employers some latitude for reducing wages. Official endeavours to enforce minimum wages through the medium of the Fair Wages Clause in Government contracts, for example, are sometimes only temporarily successful: some employers pay the agreed wages for the duration of the contracts only and revert to paying lower rates immediately after they have expired (47). And in the four years from 1940 to 1943 more than one worker in every twenty covered by Trade Board regulations (30,000 out of 580,000) were found to be underpaid, a figure barely lower than that for the two preceding four-yearly periods (48).

But, despite all efforts on the part of employers to reduce costs by reducing wages, the workers have undoubtedly had the better of the struggle. It is certain that such wage reductions as have taken place have usually not yielded the results, in terms of costs, that were expected from them. Quite often costs have actually increased as a result of reductions in wages. The late Dr. C. S. Myers quoted an extreme example: a firm in which he was carrying out an investigation cut the rate whenever the workers worked faster and raised it again when the speed of production lessened. It obviously did not pay the workers to exert themselves; and when this manœuvre had been repeated over a short period, the workers settled down to taking twice as long over a piece of work as they had done at first (49). Such deliberate restrictionism is still quite common in industry and ratecutting is often regarded as the greatest single cause of it (50). For the knowledge that improvements in the rate of output will be followed by a reduction in piece-rates is an obvious deterrent: where workers believe that they cannot safely earn more than, say, 30 per cent. above time rates, this rate tends to set the top limit to output. Differences in ratefixing then tend to result in a more or less leisurely speed of working rather than in attempts to obtain greater earnings. Given this condition, a worker who tries to earn more than the average is regarded by his mates as greedy and as anti-social: he 'spoils' the job for his fellow-workers. Thus fear of disloyalty to less capable workers becomes a contributory cause of deliberate restriction (51). Everybody is made aware of the socially accepted norm; it is quite common, for instance, for recruits to be warned by their senior mates not to exceed certain levels of output, lest rates should be cut to the common ill.

Managements' statements that restriction does not exist in this or that industry need to be accepted with great caution. Even during the war, when rates were guaranteed by both sides of industry and when many employees had little cause for worrying about costs, the fear of ratecutting continued to cause workers to restrict production. As two women phrased it when interviewed in the course of a wartime investigation: "but I expect the rate will be cut, and that makes you wonder what's the use of trying"; and the other, "I could do a lot more work if I wasn't afraid of the rate being cut" (52). It is certainly difficult to square the statement made by the chairman of a leading shoe-manufacturing concern in 1947 to the effect that the go-slow habits which in other industries often sapped efficiency were not to be found in a modern shoe factory with even such deficiencies as were reported by the

Working Party for the industry (53). It is more likely that employers in this country are as unaware of restrictionism in their workplaces as were those in the United States whom S. B. Mathewson interviewed during his investigation into restriction of output among unorganised workers: one-fifth thought restrictionism of no importance in industry, and a further fifth thought that, while it was important, it had ceased in their organisation. Research revealed how wrong they were: the investigators "saw men hiding finished products under their workbenches, afraid to turn it in: foremen working at cross-purposes with time-study men and showing men how to make time studies inaccurate; workmen killing time by the hour because the day's limit had been reached; men afraid to let the management learn of improved methods which they had discovered for themselves; older workers teaching youngsters to keep secret from the management the amount they could comfortably produce in a day" (54). The Hawthorne investigations revealed the same facts and the same ignorance of facts (55).

The cutting of bonus rates, therefore, seems to have little to commend it as a means of reducing costs, and the warfare between employers and workpeople on this score may well be utterly senseless. It may be true, too, that cost considerations do not justify the employers' resistance to all wages increases. Joan Robinson asserts, for instance, that in years past "it was commonly found that when Trade Boards enforced a rise of wages upon an industry its standard of efficiency was raised so that, after a little time, the higher wages were not paid at the expense of profits and higher prices, but came out of the increased productivity that the rise in wages itself induced" (56); and this may be true also of other trades, even today. For high wage costs are an obvious inducement to employers to think of better methods of production.

The main point, however, is that what wage increases the workers have managed to obtain during times of prosperity the employers have never managed to eliminate wholly in the succeeding slumps. Any downward adjustment in the national wages bill has tended more and more to be made by reducing the number of workers in employment rather than by reducing the wages of those at work. Thus the see-saw of wage increases and wage reductions has been, on balance, decidedly upwards, and costs have tended to follow. The war and post-war era has witnessed a great acceleration in the rise of both (57). This would have sufficed greatly to increase the pressure for reductions in costs through reductions in wages. Other factors have multiplied it. In the first place, whereas at home rising prices can accommodate rising wages unsupported by higher productivity—so that real wages remain the same—price increases hinder export sales; and, more than ever before is Britain dependent on her export trade. Secondly, the greater the proportion which the fixed charges bear to total costs of production, the more does cost reduction depend on reductions in other charges. Mechanisation involves fixed overhead charges at any time; in times of a world's seller's market for raw materials, and of extensive price controls, flexibility of cost is further circumscribed. Therefore, only substantial increases in productivity per worker, as at present equipped, can reduce the pressure for wage reduction as one of the few possible ways of quickly reducing costs. Most employers contend that even if they could be certain that increased productivity would eventually balance any further increases in wages, they cannot wait even a 'little time' for this to happen: rising productivity should at least accompany rising wages, and preferably precede them. In the absence of the usual invitation to the workers to earn more money, it is not at all clear by what incentive the employers are hoping to stimulate the workers to make such wishes come true. Perhaps the suggestion of a certain section of building trade employers, that wage claims, irrespective of whether accepted already as a basis for negotiation, should be rejected because Ministers then recommended that wage claims should be restrained (58) may be taken to confirm that they at any rate are still looking for the answer.

For the incentive function of wages, one thing above all is certain from all this: the influence on the assessment of wages of such (often conflicting) considerations as the relative bargaining strength of workers and employers, the status of different types and classes of workers, the unification of wage structures and the recruitment and distribution of workers has completely confused it. The British Employers' Federation finds accordingly that "it is impossible to dissect and segregate the precise factors that are responsible for such differentials as exist today between the remuneration of the different classes of workers" (59). Similarly, in the subdued language of a Royal Commission reporting in 1945, in "many piece price lists . . . in their original computation as in their subsequent adjustment no doubt the ordinary processes of give-and-take of collective bargaining have played their part, perhaps in some cases a greater part than the attempt scientifically to relate every item to some preconceived time rate yield (so) that in terms of yield per hour to a particular worker, some items are 'better paying' than others" (60). It was found in one investigation in 1941 that many engineering workers were able to earn no more than 5 per cent. bonus over their basic rates (61); whilst elsewhere piece-rates "were fixed too quickly and consequently at such a level that to the . . . experienced workers they (were) a source of embarrassment" (62), and in other factories again the operators were forbidden to earn more than a low maximum, and chose to alternate between periods of intense activity (when they accumulated bonus time) and periods of absolute stagnation (when they disposed of this surplus by whiling away hours and even days in playing cards). In the early months of 1947, the whole difference between the wages of skilled miners and those of recruits under 21 years of age was, in a number of coal-mines, only 5*s*. per shift (63); even now in the case of many factories there is virtually no difference at all between the wages of skilled and semi-skilled workers or even a difference in favour of the semi-skilled, with foremen earning less than either. It should therefore cause little surprise that most workers are utterly confused and look on the methods of wage fixing as "irrational" (64). Or, alternatively, that they should draw their own conclusions. For instance, the fact that, in peacetime, low production tends to go with high prices, and high prices with high wages, has implications that are anything but favourable to high production: as recently as 1946, the year during which coal production was insufficient to carry Britain through the following winter without a complete breakdown of industry and during which coal prices and miners' wages rose to well over twice their prewar levels, a miner reported that several South Wales miners' lodges had "agreed to keep output down on the idea, based on past experience, that when coal is plentiful wages are low, and when coal is scarce wages are high" (65).[1]

The connection between wages and work is indeed anything but obvious. With their reliance on financial incentive, it might have been thought that management would have used every opportunity to clarify it. Instead they have aggravated the confusion and kept it before the workers' eyes. The frequent absence of any attempt "scientifically to relate every item to some preconceived time-rate yield" ensures this. The request of Sir Raymond Streat, Chairman of the Cotton Board, for an impartial investigation into the workloads on operators in the cotton industry, for example, dates from 1946 (67) and those of some of the working parties into job evaluation are of yet more recent date (68). Even where the time required for an operation is assessed with some accuracy, it is a common habit to make an arbitrary allowance for rest pauses and other possible delays, which, when added together, may add 20 to 60 per cent. of fiction to the 100 per cent. of fact (69). Workers are aware that such methods are anything but scientific. Normally, moreover, they are able, through working unusually slowly, inventing extra motions, and insisting on abnormal precautions, to fool the rate-fixers and to sneer at the supposedly accurate assessments. In what one works manager describes as "an enormous field of industry" all scientific pretensions are thrown to the winds and rate-fixing is still entirely a matter of direct negotiation between the foreman and the worker concerned, or of an "armchair bargain between management and trade union" (70).

It is hardly sufficient for management to regard these shortcomings as altogether unavoidable. The same applies to much of the complexity of wage structures and systems which is responsible for constantly reminding the workers of the multiple considerations that have gone into the determination of the level of their earnings. Management seems intent to let the wage structures reflect in full the whole profusion of allowances, sliding scales, district variations and special additions and subtractions by which they have sought to do justice to all shifts in the relative weights of the factors. And they have not stopped short of adding to it the often even greater complications of a number of systems of payment by results. The cotton industry's uniform list of prices, which fills a small volume of 105 pages, is only the most notorious example (71). In one of the sections of the wool industry the compilation of wages is, in the words of a weaver, as follows: "they are based on an 1883 scale for looms weaving at 70 to 80 picks a minute, but 100-pick looms are much more general now and this means that the base rate is reduced by a percentage for this extra turn of speed. . . . On top of the 1883 rates comes another reduction of 10 per cent., according to a 1918 agreement. There is also a cost-of-living addition, plus a 15·625 per cent. increase for the reduction of hours to 48, plus another small percentage hours adjustment for the recent forty-five hours agreement. Every time a price is put on a weaver's ticket all the extras for healds, time sleys, odd cuts, etc., have to be added to the base rates, the various percentages added and subtracted, etc." (72).

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[1] It is a little difficult to see on what basis Arthur Horner, Secretary of the National Union of Mineworkers, replied that this allegation was "without foundation in fact" (66).

That this confusion results wherever, in the words of the employers, the wages structure has been "under constant review and adjustment as changes have arisen in economic conditions and industrial practices" (73) is quite obvious[1]; but that it were better if it were less so cannot be doubted. Before a Court of Inquiry investigating conditions in sections of the Scottish Wool industry in 1943, the trade union contended that "the operatives were tired of percentages and decimal places; the great majority of them did not know how the amounts in their pay packet had been made up . . . (and) did not understand how the production bonus was calculated or upon what basis it was applied by the different firms" (75). On this occasion employers agreed that the bonus was complicated, explaining that it had been introduced in 1920, against their better advice, under pressure from the War Department. But they had failed to make any attempt to implement the suggestion, contained in two earlier reports, that they should simplify the wages structure; and this they thought to justify on the grounds that the matter was of no real importance, since "the operative only gets the total rate of wages . . . and the figure they receive is a certain amount and it is perfectly simple for them" (76). Wherein lay the simplicity, or the value of a dependence of wages on work that was not understood by those it was to stimulate to further effort is not clear. Any wage system that is so complicated that it is practically impossible for any ordinary worker to check the amount of wages due to him is clearly of little use. The employers would have been on better grounds if they had emphasised the difficulties connected with simplification after decades of *ad hoc* and uncoordinated adjustments, such as now confront a number of major industries (77).

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[1] Such diligence, incidentally, is not universal. Wages paid to trainees in the heavy clothing industry, for example, are still dependent on an agreement made more than thirty years ago, since which time, the Working Party suggest, the manufacturing processes have been altered very considerably (74).

The natural result of the confusion—whatever its causes—is that, to the workers, all deviations from average earnings are suspect. To young recruits to industry, who have had neither experience nor a chance to show any differences in ability differences in wages can only seem due to luck (78). To older workers deviations are more likely to denote differences in ability and application; but they too are inclined to attribute them to good fortune, to good bargaining, to the incompetence of the ratefixer, or to favouritism on the part of the foreman. If a worker earns much more than his mates in the same grade, it is taken to mean that he has had a 'good job', not that he has done one. Should he continue to earn more, a rumour is likely to start that he has 'played up' to the foreman. (This affects the foreman's reputation as much as his own: for one of the most important qualifications looked for by the workers in a foreman is that he should show no favouritism in allocating bonus-earning jobs (79).) When they thus seek in differences between jobs rather than in differences between themselves the explanation for any variations in earnings, it is natural that the workers should regard variations in wages as unjustified, as destructive of working-class unity and as to be prevented. They therefore press for greater equality of earnings. The prevailing level of weekly earnings is accepted as the automatic sequel to habitual factory work, and dissatisfaction tends to focus on discrepancies between operations and workers. Investigators have frequently noted this fact. In one factory, when "the wages of any group were lower than those of other groups employed on fairly similar types of work, the individuals so affected were inclined to complain about the rate of payment. The wages question then began to occupy a more prominent position in their thoughts and tended to create a background of discontent. . . . In each of the first three departments the coverers earned less than the packers and the differences were closely reflected in the frequency of complaints. The packers of Department D earned less than any of the other groups and their complaints were correspondingly numerous". The workers were aware of the variations in wages in the different groups and this knowledge was the cause of the different degrees of discontent (80). Similarly, there was strong discontent in a foundry where, during the war, most men earned about £10 per week. This compared well with previous earnings. But a few semi-skilled workers had been so rated that they could earn £16 per week. Discontent was the result. At another firm where the rates were relatively correct according to the skill of the job the position was much happier, though the average wage earned was only about £7 a week (81). At the Hawthorne works too "most of the dissatisfaction with wages implied that the employee is just as much concerned with wage differentials . . . as with the absolute amount of his wages" (82).[1] Thus workers press for equality of earnings. Yet the financial incentive relies on creating differentials which mark genuine differences in the ability and application between one worker and another, and between one group of workers and another.

The connection between work and wages has thus become very confused by the interplay of the numerous considerations that influence the level of wages; but it has also become progressively less important. Its incentive value depends firstly on the ability and secondly on the willingness of the workers to increase their wages by raising their output; and both have tended to decline.

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[1] It is reported from Russia that "the strong bias in favour of incentive wages has in the past undoubtedly stimulated the growth of an *élite* of skilled workers" and dissatisfaction and apathy among the rest (83).

About three-quarters of all workers in industry have virtually no chance to increase their earnings by greater work (84). They are paid by time, according to the number of hours they spend at work. They have a material incentive to come to work. Once at the workplace, however, it is literally immaterial to them whether they produce more or less. Sometimes the choice is not theirs. It is absent not merely in many offices. In some sections of industry, too, in the chemical industry, for example, speed of production is regulated wholly by automatic control, the workers' job being confined to checking the control dials and seeing that nothing goes wrong. More often, as in the case of the ever-growing ranks of 'indirect labour', such as machine repair gangs or labourers, the work cannot be measured sufficiently accurately to allow of ratefixing. Or again the work may seem too delicate and valuable to warrant the danger of inaccurate or spoilt work due to workers' haste; thus many skilled workers are not paid by results. Or the flow of work is not sufficiently regular or the variety of work too great to make ratefixing an economic proposition. If time workers work well they may have their wages increased by a penny or twopence per hour; they may also have better chances of promotion and of being kept on when trade is slack. But they have no continuous financial incentive to increase their output.

The wages of some 28 per cent. only of all industrial workers are calculated on the basis of one or other system of payment by results (85).[1] The proportion varies widely in different industries. In the building trade, for instance, in which many employers are apparently intent on relying solely on the incentive of financial reward, only 2 per cent. of the workers were paid by results in October 1947 (87); despite the joint agreement, reached after more than 18 months' negotiation, to extend payment by results in the industry, the proportion is still very small. In the metal, engineering and ship-building group of industries the proportion is little less than one-half, in coal-mining it is about one-third (88). According to whether or not the work can be fairly accurately measured and whether management and trade union agree to operate a system of incentive payments, there are further wide variations within the same industries. In some Royal Ordnance factories, for example, it was possible at one stage of the war to fix bonus rates for some 70 per cent. of the work (89); in shipbuilding most of the trades comprised by the Boilermakers' Society are paid by results, while most of those covered by the Shipwrights' Association are paid by time (90). Since women are largely employed on repetitive and measurable tasks, proportionately more women than men are paid by results (91).

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[1] In the U.S.A. the proportion is about the same. Some 30 per cent. of the plant workers in manufacturing industries were paid by results in 1945 and 1946 (86). The survey thus excluded workers in such industries as building, transport, and public utilities, which were included in the British survey and the great majority of whose workers are paid, in both countries, by time.

The proportion of workers whose wages contain an "incentive element", is thus small. Even so, it is slightly greater than at the beginning of this century (92). What has declined is the extent to which these workers can influence their wages. Broadly, two sets of factors are mainly responsible for this result; the first comprises the twofold success on the part of most trade unions in insisting that, if there was to be any payment by result, there should be payment by time as well, and then in concentrating their demands for wage increases on time wages. Only a very small proportion of all industrial workers are now paid wholly by results. The unorganised outworkers of such industries as clothing and leather goods are probably the most important remaining groups: their wage is so much per piece; they double their wages by doubling their output. When it is combined with regular and insured employment in an industry, as happens occasionally in building and shipbuilding, even subcontracting is often undermined by minimum wages. A similar combination existed at one time in the engineering industry. There, a minimum (fall-back) wage was instituted even though wages continued to be assessed wholly on piece-rates; this arrangement still obtains in sections of the cotton and hosiery industries. If his performance fell short of the required minimum, the engineering worker, though paid his minimum wage, was debited with the loss in terms of earnings; and he fell in debt with his employer until such time as he was able to pay back through producing more than the minimum. Before the First World War there was no limit to the possible amount of indebtedness—and the consequent dependence—of the worker to his employer (93).

After 1919 it was widely agreed that debits should not be carried forward for more than three months; but as late as the early thirties it was still possible to find workpeople with debit balances of several pounds (94). That they had managed to remain at work supports the view that it was not always the most incompetent or lazy workers who produced least and that, since under this system of payment the results did not always go to the most deserving, the incentive was not satisfactory. By the beginning of the war most engineering firms had abandoned this system in favour of some form of direct payment by result, combined with a time wage.

Time wages generally had then already been raised to such an extent that they rarely accounted for less than two-thirds of total wages; sometimes they accounted for considerably more (95). The proportion was probably somewhat reduced in the middle of the war, when bonus earnings were often exceptionally high. But this factor disappeared towards the end of it, while another, working in the opposite direction, remained. Automatic adjustments of wages to the cost of living are normally made by means of a separate bonus; but incentive payments are calculated only on the basis of time rates. Thus total time wages have been inflated substantially without any compensatory adjustment in incentive payments, with the consequence that in the engineering industry, for instance, where bonus payments should for the worker "of average ability" add at least 27·5 per cent. to the time rates, they add in reality only some 12 per cent. if the cost of living bonus is included, as it must be, in total time wages.

The second set of factors responsible for the decline in the ability of workers paid on incentive bonus to influence their wages by varying their output is made up of technology and economics. In the first place the number of workers who operate machines of which the speed is predetermined by technical considerations, though small, is growing. Automatic machines provide examples: the worker's task is limited to watching that nothing goes wrong with the automatic supply of materials and with the mechanism of the machine; in many cases the product is equally automatically disposed of. Organisational factors, production planning, often also set a limit to the speed of work that can be attained by any operator. Work on conveyor belt assembly is an obvious example. Whether it consist in putting a spoonful of jam between two halves of sweet biscuits, packing electric bulbs, checking ball bearings, assembling carburettors, or decorating pottery, the conveyor belt must travel at a speed that enables the slowest worker or the worker with the lengthiest task to keep up. The speed is set for all. The contribution of each worker to the quantity of output thus has a top limit; it lies in an output that conforms with this limit, but no more. The worker's only choice is whether or not to produce less. If he produces less at any time, he has little or no chance to make up the loss. He is likely, moreover, to have upset the even flow of production on which other workers depend. For this type of worker there was a great deal of truth in wartime admonitions based on "it all depends on me". The corollary of the representation of the worker as "the vital link" in the chain of production was also obvious: he could do no more than hold his own; any increase in production had to be a joint effort, and what was required of him depended as much on the efforts of others as theirs depended on his.

Managers have generally acknowledged, and exaggerated, this growing rigidity of productive processes by assigning a somewhat different function to payment by results than their forefathers. Whereas formerly all saw it in stimulating the worker to produce as much as he could, with "the sky as the limit"; to many it is now "to keep the workers alert", "to keep their minds on their work", and to reduce slackness to a minimum. The aim of payment by results used to be an increase of production; now it is the prevention of a decline. There is some doubt whether payment by results can satisfactorily fill this new rôle.

A related doubt is whether the worker should be left the choice of purchasing slackness, inefficiency or absence with part of his wages. For no loss of wages on his part can recompense the firm, and often his mates, for the loss of his output. For this reason, the Ford Motor Co., for one, have eschewed the use of payment by results for keeping their workers on the job, and rely instead on strict supervision backed by the sanction of dismissal; high time wages are relied on to secure new recruits. Other organisations have tried to make do with additional bonuses to promote, at any rate, regular attendance. In the coal industry, for instance, the five-day week agreement of May 1947 provides for an extra day's pay for all who work the full five shifts of the week, and the private owners had temporarily secured a similar arrangement some two years earlier. A very few firms have proceeded further and incorporated a bonus for good attendance in a radically recast basis for all payment by results. Dissatisfied not only with the weight given to regularity of attendance on the old basis of calculation, but also with the total absence from it of such considerations as the care of tools, the safety of the workers' methods of work, his initiative and social abilities, they now rate all these factors and others, and pay the worker according to his general merit. In merit rating, no more marks are normally allotted to speed of work than to regularity of attendance and reliability of work.[1]

But more mechanisation has not only meant that machine operators have become less able to control their output: it has meant, too, that progressively more semi-skilled workers are being employed in industry, who require other workers to set their machines and to check their products; and that an increasing number of workers are engaged on machine maintenance, store-keeping and transport. Some of these ancillary workers are paid by results. In coal-mining, for instance, the proportion is about one in eight (97). But the results of their work are generally not measurable and would indicate little if they were. If a maintenance worker is doing his job properly he should not be faced with an inordinate number of serious machine breakdowns; and the most efficient foreman is not necessarily the one who appears to be the most active. 'Indirect' workers, if they are paid by results, have therefore to be paid by the results achieved by the machine operators, the 'direct' workers, whose efforts they are supposed to promote. But the output of the direct workers generally depends only to a very limited extent on the efficiency of any one indirect worker: the machine setter's effort to get a machine ready for production may be nullified by the failure of the transport men to arrive in time with new work, the absence of the operative, or the inability of the foreman to evoke any effort from his workers. And the larger the number of workers upon whose output the bonus of the indirect workers depends the greater loom these uncertainties; and the frailer the connection between the work of the indirect workers and his wages. He may be able to identify his work fairly closely with the output of a small group of workers or a line of machines, but he can hardly do so with that of a large production department or a whole factory. When, as happened in many engineering factories during the war, production bonuses based on the output of whole factories were paid to foremen, transport workers, inspectors, storekeepers, and A.R.P. personnel alike, their incentive value was reduced virtually to zero.

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[1] The percentage distribution of points in one scheme is as follows: quality of work 20, speed of work 20, attendance and punctuality 20, reliability 10, initiative 10, care of tools and materials 5, social attitude 5, health 5, safety 5 (96).

To trade union pressure for higher time wages and to technical and economic factors, which together are the main causes of the decline in the ability of the workers to influence their wages by varying their output, must be added the limiting effects of the particular systems of payment by results that many managements have chosen to employ, or to continue to employ, in their factories. Under the straight piece-rate system which is operated extensively in many of the major industries of Britain, including coal, engineering, textiles, boots and shoes, clothing and glass, the bonus per unit of output remains the same whatever the level of output. Differential piece-rates, in which the payment per unit increases with rising output, and with it the ability of the worker to raise his wages, are hardly applied in British industry. Premium systems of payment, on the other hand, under which payment per unit of output declines with every increase in production, are applied extensively, as for instance, in the engineering industry. The ability of the worker to increase his wages becomes progressively smaller; and in both American and British factories premium systems are in fact associated with restriction of production (98).

Finally, when all these limiting factors have played their part in reducing the ability of the worker to increase his wages income tax often takes a sizable proportion of what bonus earnings remain. It is, of course, not true that any workers work, as they say, "for nothing"; and it is true that most workers receive in kind as much as or more than they pay in taxes. Immediate considerations are, however, the ones that mainly affect the incentive to work. And income tax undoubtedly reduces the ability of the workers to earn more. This is particularly so in the case of single workers, for whom the attraction of higher wages tends, even without this factor, to be least. The variable portion of wages, the 'incentive element', is affected most. Moreover, under the Pay-as-you-earn system of tax assessment the workers can no longer fail to notice this. Under the earlier systems tax was assessed on the basis of the previous year's earnings; it did not vary with the current earnings: immediately, both increases in pay due to overtime, higher output, or to any other reason, and reductions due to absence or reduced production, remained unaffected; income tax had therefore the main characteristic of an overhead charge, namely, it did not vary with output. Now a change in wages leads to an immediate alteration in tax: income tax has become the worker's running charge, higher the more and smaller the less he produces.

The will of the workers to make use of what limited opportunities they have to increase their wages by raising their output depends on their desire for further spending and saving. From 1924 to the beginning of the war real wages increased, on an average, by about one-fifth (99).[1] During the war the rate of increase was greatly accelerated. Against an increase in the cost of living of 30 per cent. average wages increased by some 80 per cent. (100). And, owing to the greatly increased employment of women in industry, wages reckoned on a family basis increased considerably faster.

There is no *a priori* reason why the desire of the workers to earn more should have remained unimpaired by the increases in wages they have secured, and that it should therefore still call forth the same effort for its satisfaction. It seems to be generally agreed in the first place that when people earn wages greatly higher than those to which they are accustomed the wage incentive ceases to be as effective (101). They desire a certain level of weekly income and expenditure. This varies from place to place, but at any one place changes only very slowly. Rapid increases in wages are therefore likely to cause an immediate reduction in the desire for yet higher wages. This sequence of events comes about normally, for example when industrial work starts in relatively poor agricultural districts, as in the remoter parts of development areas. In America, too, businesses that had moved from the northern to the southern States have found it impossible for many years to reach a level of production at all comparable to that in the North, mainly because the Southerners worked more slovenly or were wholly absent from work (102). But it is likely to happen whatever the cause of the sharp increase in wages. If it is granted for the purpose of attracting additional workers to an industry, it may take the workers already in the industry completely by surprise. This element is not necessarily cut out even when a demand for higher wages is launched from the workers' side. Increases designed for ironing out wage discrepancies between workers doing similar work in different parts of the country may be a complete windfall for the lower paid workers, especially when they originate in a desire on the part of the higher paid workers to safeguard themselves against low wages competition rather than in pursuance of a wish to enhance the material welfare of their poorer mates. The mere fact that wage negotiation has increasingly become the business of full-time trade union officials has increased the likelihood that higher wages will come as something of a surprise to the workers. Higher wages, indeed, may not even be what they really want. The officials who must rely on their interpretation of the wishes, and possibly diverse wishes, of the workers on the job may be wrong; and they are trained to translate the wishes into terms of pounds, shillings and pence and to believe that they depend for their position on continually obtaining new tangible benefits for their members.[1]

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[1] The decline in the birth-rate and in the size of families during that period, and the increasing benefits in kind obtained but not paid for by the workers at least offset any error in the cost-of-living index on which this calculation is based.

Workers will fight to maintain their accustomed standards. Thus, demands for higher wages are particularly urgent in times of rising prices, and in many industries managements still safeguard themselves against claims on this score of need by adjusting wages automatically to the cost of living.[1] And special needs will evoke extra effort. The various tax and family allowances do not eliminate the married man's financial 'handicap', and he is more likely than his single mate drawing the same pay as he to be faced with new requirements. Hence managements' formula for the efficient workman: married, one or two children, buying house, having or hoping to have a small car or motor-cycle (107). Special efforts to satisfy quite temporary needs for higher wages are well known in industry. The annual holidays almost invariably provide such an occasion: usually there is a spurt in production just before and just after them.[2] Again, many a worker makes his attendance and effort dependent on the outcome of other gainful activities. When he loses at the dogs, for example, he may be very willing to accept even an increase in the speed of his machine in order to maintain his accustomed wage level (108). But when this has been attained and there are no urgent special needs, increased leisure becomes a progressively more attractive alternative to earning higher wages through greater work.

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[1] Since only very few workers, and normally only the most active and politically conscious, take part in local trade union meetings—the main platform on which the workers can air their views with a fair hope of reaching the ears of their officials—the possibility of misinterpretation is very considerable (103).

This is all the more so when the workers' opportunities for spending money do not increase in proportion to their opportunities for earning it. In many places in Britain the opportunities for spending have always been limited. Coal-mining districts are obvious examples: miners live for the most part in isolated communities, with few opportunities by way of costly entertainment and relaxation; they cannot spend much money on cinemas, music halls and 'dogs'. The American parallel is to hand. In districts where mines are likely to be exhausted in a short while and where there is consequently no point in building proper houses or roads, "the only way of indicating the status of a self-respecting man who 'is as good as the next one' (is by) that conspicuous leisure . . . which is obtained, not in the ordinary way of working, earning, and then buying, but by not working—by walking out of the mine at two o'clock while some other chap who is so much the dub of a worker that in order to make a living, he has to stay in till the day is ended at four" (109). Most wage increases in wartime Britain were not balanced by corresponding increases in the opportunities for spending. That interviews of over 15,000 workers in all parts of the country in 1947 did not support the view that shortages had still an important influence (110) and that according to one employer "the one thing that Smith is tired of hearing is 'workers don't work because there aren't enough goods in the shops for them to spend their wages on'" (111) is not conclusive evidence that the deficiency has now been made up (112). It is in any case not merely a question of whether or not there are enough goods but also whether they are of the kind and price that will tempt workers to try to earn more money; and shortages for instance of durable consumer goods, especially houses, and petrol rationing continue to reduce the value of higher wages as an incentive (113). For increasing it, the persistent pressure on the Government to release to the home market more supplies and to allocate additional points for the purchase of rationed foods and scarce goods is therefore aimed as correctly as the parallel pressure to reduce taxation, especially on overtime, is not (114). The latter will only serve if it is combined effectively with steps to make saving more attractive, as, for example, by the systems of "instalment purchases for deferred delivery" of durable consumer goods or the subsidised superannuation schemes to reward current efforts with earlier retirement that have been suggested by economists as ways to increase the financial incentive without adding to the inflationary pressure (115).

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[1] At the beginning of 1947 the wages of some 2·5 million workers, who were employed mainly in the building, coal, iron and steel, electrical contracting, civil engineering, hosiery, boot and shoe, furniture and tobacco industries were linked to the cost-of-living index, replaced later in the year by the more adequate Index of Retail Prices (104). (As Professor H. Richardson has pointed out, these workers are exempt from indirect taxation, of which the indices take account (105).) Similarly, regional differences in wages are designed to compensate the workers for differences in the cost of living; many workers in London, for instance, are paid slightly higher wages than their mates in the provinces (106).

[2] Where, as in many engineering factories, the weekly assessment of piece-rate earnings causes payment to be deferred to the following week, the spurt starts one week earlier, i.e. a fortnight before the holiday.

But certainly more important than the shortage of goods, and probably even more important than the considerable rise in real wages, is that increased time wages have been mainly responsible for increased earnings. Wage rates have in fact increased as fast as total wages. In many industries they have reached a level where they cover wholly the normal needs of the worker. Some employers agree with the workers that this is just as it should be and that the incentive element should operate only as a stimulus to provide something extra (116). But, whatever the ethics of this interpretation, it is highly unlikely that this purpose will evoke as great an effort as that of providing for necessities. In much the same way in which they regard it as necessary to earn their living, the workers take it for granted that time wages should be obtained without undue exertion and be sufficient for a 'fair' living standard. Yet the existence of a substantial time wage may well tempt at least "the less capable, less interested or less ambitious workers to do as little as (is) compatible with decency or discipline", and most workers will be affected by it at one time or another (117).

This is not to say that payment by results is of no use in stimulating the workers' will to work, that some methods of payment are not better than others, or that extension and improvement in the application of financial incentives in industry are not likely to be worth while. During the late war the introduction of bonus schemes in Royal Ordnance filling factories, for instance, was followed by increases in output of 25 to 30 per cent. without any deterioration in quality of production or an increase in the accident rate (118); in a factory before the war it was followed by an increase of 46 per cent., at which figure it remained for 15 weeks before going up another 30 per cent. upon the introduction of a straight piece-rate method of payment (119). On some sites the average number of bricks laid by bricklayers increased from 300 to 750 per day, or by as much as 150 per cent. when the workers changed over from time to piece-rate payment (120). A building firm whose workers earned up to £16 per week on the basis of subcontracting—the only form of payment by results that could be introduced in the industry during the two years after the war without committing an offence against a Defence Regulation—insisted that the work cost them less than when they paid a £7 time wage per week (121). Payment by results does not always merely cause the worker to work faster. In building, again, two other effects were immediately observed: first, the payment of a bonus induced the worker to avoid wasting time when he should be working; and, secondly, it made him far more conscious of faults in organisation, working methods and equipment causing delays and so reducing output (122). Nor is it true that a quick worker is necessarily inaccurate: a pre-war investigation in an inspection department revealed that, though output was almost doubled upon the introduction of piece-rate payment, accuracy actually increased (123). Payment by results is sometimes of use too during training periods: in one case the rate of improvement of those paid on the basis of a competitive bonus was between 20 and 40 per cent. above the rate of those paid only on the basis of time (124).

Through mere clarification of the connection between work and wages it is also sometimes possible to secure higher output. There is no defence, for example, for the continued application of the type of systems under which only the skilled worker is paid by results while he decides what wages to pay to his helpers. The Working Party on the heavy clothing industry describes it and comments as follows: "A skilled operator has working with, or rather for, him or her a number of helpers, usually from two to seven. The skilled operator is paid at piece-rates for the total production of the team; whilst the helpers are paid on a time basis, the payments to the helpers being deducted from the total payable to the skilled operator. Where the skilled operator is a person of high character the system results in high productivity and a square deal for the helpers. But in other cases we have seen such productivity bought at too high a price. Employment of the workers by the workers might appear at first sight to free the management of responsibility; but while the extent of the 'set' system did not seem large in relation to the whole industry, there can be no possible doubt that employers and employees alike should determine on its speedy elimination" (125). Having survived the end of most industrial practices of the late eighteenth and early nineteenth centuries, it was still in use in some districts under the name of "butty" system in the coal-mining industry in the nineteen-twenties, when about 40 per cent. of all the men, mainly hewers, were on piece-work and were wont to pay their assistants a time wage out of their own earnings (126).

Schemes, again, whereby a bonus is paid to the operative whenever his weekly output exceeds a specified level unduly restrict the connection between work and wages (127). And it is valueless when, as has happened often, "incentive systems are calculated to induce an anxious struggle to attain impossible standards . . . and to discredit the use of incentive systems of every kind by the introduction of 'speeding up' devices with little regard to the physiological or psychological effects of continued work at high pressure" (128). The wages of indirect workers, again, could often be based on the output of a smaller number of productive workers than they are, so that the results of their efforts are more apparent.

But even given all possible extensions and improvements it is still useless for managers and foremen to take it for granted that the offer of an extra shilling or two is all that is necessary to evoke a marked increase in effort and satisfaction in the workroom (129). It will not affect the majority of workers in industry, nor the minority all the time, or all to the same degree. There is no guarantee whatsoever that the workers' desire for earning more money through greater work will ever catch up with the increases in their wages; or that the offer will not result in yet further reductions in working hours below what is, in the light of current knowledge, the level most likely to yield the highest production in the various industries. In short, the promise of financial reward is of use as an incentive and can be made to be of greater use. But it can never suffice as the only incentive to work.

CHAPTER V

FURTHER MISCONCEPTIONS

> "Your only business, my good fellow," pursued Sir Joseph, looking abstractly at Toby; "your only business in life is with me. You needn't trouble yourself to think about anything. I will think for you; I know what is good for you; I am your perpetual parent. Such is the dispensation of an all-wise Providence!"
>
> CHARLES DICKENS—*The Chimes.*

The white elephants of welfare — conflict between welfare and efficiency — the importance of genuine concern. Interest in Work: *the assumed casualty of modern industry — variety and methods of training — interest a subjective not an objective criterion — the consequent need to match worker and work — current emphasis on alleviating boredom rather than on stimulating interest in work.*

Much of the emphasis placed by management on the incentive of financial reward has its origin in the unstated assumption that the stimulants which are effective in spurring them on to work will be effective in the case of the workers also. From this follows that if the workers do not respond, if they do not seize eagerly at every opportunity of increasing their wages through raising their output or through shouldering more responsibility, if they are apathetic towards the prospect of moving up in the world or about competing with their mates, management have really no option but to threaten with dismissal, or if the apathy be too general, to let things drift and wait for 'better times'. This attitude, based on the belief that they have no need to develop any further their insight into the workers' real hopes and fears, that they instinctively know what is 'good for them', conditions the whole range of managerial conceptions.

Many managers suggest, for instance—and their policies bear them out—that were they in their workers' shoes they would be duly grateful for cleaner factories and for canteens, for clubs and any other endeavour of the firm to promote social activities, and for all the other items for which many a welfare department holds itself responsible. For in these ways the firm proves that it is a good employer, that it does everything for its workers; and in return it is entitled to expect loyalty from its workers and unfailing fulfilment of its expectations of increased production. And so, full of good intentions and of the righteousness of their cause, managements have their factories painted and canteens installed, club houses built and welfare officers appointed. And very often very little happens: inexplicably, the workers are not grateful, they do not use the club, and the canteen they use only very little; they show no greater loyalty to the firm nor any inclination to work harder. At best they seem to take such improvements completely for granted, as if they were theirs as of right and, in any case, long overdue. At worst, they sneer that the cost has been incurred at the expense of the tax collectors and the nation or even that it has come out of their own rightful wages. And management, rightly aggrieved at this reception, wrongly conclude that workers are generally unresponsive and ungrateful, and continue to marvel, with the Working Party of the heavy clothing industry, at the apparent paradox that better work should ever be carried out under worse working conditions (1).

In reality, what has most often gone wrong is management's interpretation of the workers' motivations. Good conditions will, of course, tend to promote output and bad conditions to detract from it. But either result is likely to have several reasons. For instance, where shifts start early and workers are prone to come to work without taking breakfast, the serving of refreshments early in the morning may increase the workers' capacity to work. This may be the main explanation, too, for the reduction in absenteeism which was reported to have taken place during the war in a firm which started to distribute vitamins, cod-liver oil and other refreshments to its workers (2). But it would probably be more correct to attribute at least part of the reduction to the effects of this gesture on the workers' will to work, to their impression that management was showing concern for their well-being. Thus the psychological probably added to the physical effects. In current experiments with colour schemes in industry, this joint psycho-physical approach is deliberate. Similarly, the combination can also lead to a reduction in output: heavy noise, for example, is likely to diminish the workers' capacity for work; it may also induce them to think that management do not care about their discomfort. What is more important, however, is that the two types of effects need not operate in the same direction; and while it may not be possible to differentiate accurately between the effects of welfare arrangements on the workers' capacity and their effects on the workers' will to work, it is important to maintain a distinction.

At a Royal Ordnance Factory during the war, for example, the decision of the manager to allow time off to enable the workers to wash their hands before meals was promptly followed by an increase in production; yet it is probable that he had reduced the time spent by the workers at their machines and hence their capacity to work (3). The inverse relationship between capacity and will is more usual. The health of the operatives is often quite inadequately cared for, and the capacity of the workers is often unduly low because of shortcomings in working conditions (4). Lighting is one example (5). The physical position of the worker in relation to his machine is another, but one less often stressed. Much more might be done, for instance, to adapt the machine to the worker instead of adapting the worker to the machine. Machines are necessarily of standard size, but it is not therefore right to assume that workers will also conform to the standard size. Many machines and working tables are either too high or too low. "The workers change, the tables remain; and so generations of workers adapt themselves with astonishing docility to the tables" (6). Often the design and positions of seats, working benches and levers induce faulty posture in the worker, and produce undue physiological strain in the operator; instruments are fixed in such a position that difficulty or divided attention results when the operator has to read them (7); machine feeds should be better adjusted. According to Lord Forrester, there is, in many factories, "an astonishing lack of thought going into (the) ordinary question even of sitting or working position" (8). Nor is there always an attempt to encourage and help individual workers to find out for themselves by trial and error what is most convenient and least fatiguing (9). It is likely that output will increase when provision is improved in factories where the deficiencies are serious, as for instance "in the very great majority" of workshops in the jewellery trade, where conditions vary only from "bad to very bad" (10). And firms in industries where standards are very low are probably unduly sceptical with regard to the possibilities of increasing output when they state that "there is no incentive for them to improve working conditions so long as there are so many firms which are obviously incapable of meeting the cost of making similar improvements" (11). Nevertheless, there is no guarantee whatever that even in their case increased output would result; and the uncertainty increases with every improvement that is made.

This is so not only when workers are so used to conditions that they are hardly aware of them (12). It is frequently remarked that they tend to "take to official welfare as a matter of course and have no interest in it" (13). Much of it they may have never wanted and do not want now. Some of it they may desire greatly, but do not appreciate when it is provided by the firm. This is particularly likely as regards provision for "fun and games after hours" which is often regarded primarily as an unwarranted attempt on the part of the firm to intrude into the private lives of its workers.

Unasked, and not associated with their choice or installation, workers may even resent new welfare arrangements: these may appear to them to have sprung mainly from management's desire to patronise or to appease the workers. The multiplication of welfare whenever employment is high is often taken to underline management's previous lack of concern. And often, too, more welfare only emphasises anew the impersonal nature of the factory organisation, of that "vast machine which runs like a clock, without human personality, never seeing them, never blaming them, never praising them, never penalising them, never rewarding them, never driving them, never exhorting them, but expressing itself impersonally from time to time like a book of rules" (14). To avoid this danger, as one of the Working Parties stressed, attention should be paid to the quality of a firm's arrangements for its work-people rather than to the quantity of money which has been laid out on them. Provided that a firm's relations with its employees are infused with a spirit of sympathy and understanding, working conditions will be better than in those cases where suggestions for minor improvements are met with an obdurate lack of interest even though palatial but little used first-aid rooms are provided (15). Already industry is full of such white elephants.

The danger that the management's and the workers' interpretation of the value of welfare arrangements may diverge is enhanced where provision for the well-being of the workers is seriously out of line with provision for the efficient progress of the work. No amount of welfare can make up for obvious inefficiency and consequent frustration in the workshop: it will only throw them into relief. Streamlined welfare arrangements go badly, for example, with the obvious antiquity of many machines and the equally obvious inefficiency of many working methods employed in British industry. That some of the machines are quite adequate and that some of the working methods are efficient may be true; but it is irrelevant. From the point of view of increasing the workers' will to work what matters is not what is but what there seems to them to be. Managements might well copy the example of the textile firm which removed date marks from their oldest machines, or of those which, through freshly painting their machines and removing overhead-shafting, have managed to make their machines look younger than they are. And there is certainly no good reason why new machines should be marked with the stamp of antiquity merely because inadequate attention has been paid to their exterior design (16).

Extensive welfare combines equally badly with faulty work planning, when bursts of great activity alternate with periods of idleness (17), or with such inefficient methods as that, reported from the clothing industry, where output per worker is often reduced by as much as one garment per week because of the carelessness with which work is given out to the operatives (18). The incongruity of such habits as that of leaving semi-finished work standing about on the factory floor in full view of the operatives making more of the same products is rarely considered: yet there is little so conducive to a reduction in the apparent urgency of work.

Again, operatives are often allowed to see other workers idling. The complaint is frequently heard that 'indirectly productive workers', such as maintenance workers and supervisory staffs, "just stand about and can't have any work to do". In trades that depend absolutely on continuous production, workers are sometimes employed who are really additional to those expected to be at work. Their function *vis-à-vis* partaking in work is exactly the same as that of the twelfth man at a cricket match: when somebody drops out they take his place. At one time the 'bye-turn man' was a common feature, for instance, in some branches of the iron and steel industry (19). Anything that conduces to better organisation of work or to a reduction in absenteeism reduces the need for such full-paid part-time workers. Those that remain should, wherever possible, be engaged in some other task; they should certainly not appear idling in the workshop.[1] Sometimes it would be wiser to send workers home on full wages than to let them lessen the atmosphere of urgency. When the available work is strictly limited, for example, virtue can be made of necessity by encouraging the workers to finish quickly and go home on full pay—which will appeal to them and may reduce the firm's fuel bill into the bargain.

Not all workplaces can possibly be bright, clean, and obviously efficient. Materials are used in some industrial processes which it is as yet impossible to confine to the machines: oils are perhaps the most common example; pitchblack, used in the lace industry, a rather specialised one. Some occupations, such as mining and cutlery, are inherently dirty. Many buildings, again, do not allow of the best production flow, of ample spacing and of the best conditions of work (22); yet often they cannot be replaced for many years. But workers tend to be aware of these inherent deficiencies. What is required of management is to make them feel that everything is done that it is possible to do to make the workplace efficient. Sometimes the task is beyond the scope of management: coal-miners, for instance, used to complain, prior to nationalisation, that "they have, in some cases, daily experience of the waste of their own time, and therefore the additional cost to the colliery, that are due to long travelling underground (and) sometimes they know that this waste of time is caused by the bad layouts of the mines, owing to the leases of coal being dependent upon the boundaries of landowners' estates . . ." (23). But this predicament is rare. To show concern generally depends less on changes in ownership or grandiose welfare schemes, large-scale re-equipment, or replanning, than on the prompt settlement of a hundred and one small matters that crop up daily in the factory. In fact, the large plans will fail to the extent that they do not build on an existing confidence that management holds itself responsible for dealing promptly and sympathetically with the many small matters as they arise. Bill cuts himself; he needs to be sure that the injury will be treated quickly and without great fuss. Joe's wife is ill; only an extended lunchtime will enable him to do the shopping. Gladys feels slightly 'off colour'; she would do better on a sitting-down job for the day. A light fuses here, a catch ceases to close properly, a machine-guard rattles, the lubrication feed needs adjusting, a pump requires cleaning. The prompt repair may not be essential to the continuance of production, and there is consequently a great temptation not to worry about it or to 'patch up'. The Heath Robinson devices employed in industry to deal with small matters such as these are legion and may lend a certain amount of extra attraction to the job as well as prompt the worker to apply additional skill. But their useful function is temporary. If it is felt that these inconveniences and hindrances are not removed as promptly as is possible under the conditions, they will impair output. This was stressed, for instance, in all three winning essays on incentives in a workers' competition in a large car factory (24). "Into the attitude of a management which 'has no time' to remove obstacles . . . the workers will read a callous indifference which renders wholehearted co-operation impossible" (25).

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[1] When labour is short the natural tendency is to review wasteful arrangements. But when, as in the immediate post-war years in Britain, a shortage of workers is combined with shortages of fuel and materials and, what is more, with a seller's market for the goods produced, the position is full of danger. Already early in the war the Board of Trade reached the conclusion that to limit production indirectly by limiting supplies of raw materials had the effect of limiting the volume of production which was released for sale to the public without releasing a proportionate amount of labour (20); and in the clothing industries in post-war years high price-ceilings have allowed manufacturers to hoard labour, and there has clearly been waste of time in some factories (21).

It is the feeling on the part of the workers that management is genuinely concerned about their welfare and their working conditions, which is at the core of the problems of physical environment. The concern needs to show itself in continuous adaptation in detail, involving when the occasion arises a certain amount of improvisation and temporary waiving of rules. It arose, for example, in a certain food factory during the war, when a group of women who were engaged in sorting fruit had to stand at work because the number of available chairs was insufficient. Additional chairs could not be obtained for some time ahead. So the women offered to bring their own. But management found adaptation impossible; the suggestion was turned down on the ground that all things on the factory floor had to be the property of the firm. There is legitimate doubt whether the offer should not have been accepted, even at the cost of some inconvenience; for to the workers the refusal meant that the sanctity of rules was more important to management than the workers' comfort and, in this case, also their efficiency. Yet the same firm was leading its competitors in the amount of welfare arrangements it provided and the directors were fond of asserting that everything possible was being done for the workers. In many factories, again, it is as difficult to obtain new tools as to avoid all-embracing and unceasing attention from the welfare department. Grinding-wheels have to be used until they break, drills until their threads have almost disappeared, files until they are virtually flat; the workers' ingenuity is often put to severe test as to means and methods of shortening the time lost through the use of bad tools. At the same time, as one girl put it during the war, "they welfare you to death" (26). Such lack of balance often eliminates the value of welfare arrangements. Again, there is no gain from welfare arrangements whose value is obvious only to management. In short, it is not what welfare arrangements there are, but what they mean to the workers that matters.

Interest in Work

But it is in assessing the scope for the incentive of interest in work in modern industry that management show most clearly not only their tendency to misinterpret, through sheer ignorance, the attitudes of the workers, but also its disastrous results. It is not that they fail to see that interest in work is a potent incentive: management like their workers to show interest. The contention is that there is no interest in most modern industrial work, that only the few really skilled workers that remain in tool rooms of mass-production factories and in trades such as jewellery, where one pair of hands still fashions the whole article, do interesting work. Most work is, in their opinion, necessarily uninteresting and monotonous. It follows that it is virtually impossible to foster interest in work and to enlist it in the drive for greater and more efficient production. Rather is interest bound to decline as mechanisation proceeds and the conditions that make for interest disappear: little or nothing can be done about it, apart, that is, from taking people's minds off their work.

It is contended, for example, that variety is virtually absent from modern industry, and that interest in work cannot be maintained without it. When each worker spends almost all his time pushing buttons or pulling levers or putting a part on the conveyor belt for assembly there can be nothing creative, nothing interesting in the work. But even apart from the fact that this view is based on an exaggeration of the scope of mechanisation in industry and of the control it exercises over the worker—only a minority of workers operate machines; only a minority are engaged on what can properly be described as repetitive work—this is not necessarily true. Even for those on repetitive jobs there is much more variety than management tend to recognise. The worker often notes differences where no 'outsider' can—differences in the texture of materials, in the finished article, in the behaviour of the machine—; these introduce some variation into the worker's daily task. The girl who, engaged all day in putting little corks in tooth-paste tube caps, said to one investigator in all seriousness, "You've no idea how interesting it is; the corks are always coming up different" (27), was not a mental case, but probably very observant. An investigation at Rowntree's cocoa works revealed that, of the factors found to be significant with regard to output and contentment, the one that tended to be least appreciated by management was the satisfaction which men and women found in work (28). During the Hawthorne experiments, again, no evidence was offered in favour of the conception that modern industrial work has no real satisfaction to offer to the workers; and any misconception on this point was attributed by the investigators to the prevailing lack of knowledge of the variety of industrial processes (29).

In any case, only rarely do management face problems raised by inadequate variety in work without power to do something about them. Where lack of variety sets a limit to the profitable division of labour it is clearly important not to pass it, whatever technical and accounting advisers say to the contrary. Often more change would raise the capacity of the workers. In heavy gang work, such as is required in the iron and steel and the glass trades, it is accepted that fatigue is reduced when the members of the gang take up each particular activity or position in turn. In light repetitive work there may be considerable local fatigue, and a suitable change in activity will enliven comparatively unused parts of the body. Boredom resulting from lack of variety tilts the balance further against certain types of work organisation.

Where these organisations remain it may be wise, as time goes on, to move the workers from one job to another. The administrative problems involved in this may be complex. As early as 1924 the Industrial Health Research Board suggested that, as far as the workers' output was concerned, deliberate hourly changes in activity produced the optimum condition between continuous repetition of the same process and numerous changes in the activities performed (30); but after investigating the same problem in soap wrapping, bicycle-chain processing, tobacco weighing, cigarette making, and assembling cartridge cases, they reduced the most favourable interval between changes to one and a half hours (31). The 'optimum condition' varies between different types of work, workers and work situations. Occasionally workers can profitably be set to do a succession of operations, even though this may be anathema to many a theory of production planning. In a firm making confectionery, for example, the greater variety involved in the combined weighing and wrapping processes together with the attractive appearance of the finished tins seemed to give satisfaction. This operation occupied the mind as well as the hands, and the changes in the type of work tended to promote interest and to retard the onset of boredom (32).

Similarly in an American engineering plant during the war the workers were asked to assemble all parts of the product instead of fitting one or two parts as is usual in conveyor-line production. And their output compared favourably with that of a sister plant (33). Where for one reason or another a workshop is not fully manned the same results can be unintentionally brought about. The nightshift at a London engineering factory during the war, for example, was too small to man all machines simultaneously and some workers operated several machines in turn; their output compared favourably with those of the dayshift in the same factory and of other factories engaged on the same type of work but fully staffed; and this applied alike to skilled, semi-skilled and unskilled operations. Even an alteration so small as a periodic change in the speed of operation may enhance interest in work through introducing greater variety.

Among the direct results to be expected from overcoming the organisational problems involved in enhancing variety are increased output, reduced fatigue, greater satisfaction, and often less scrap. Yet most managements continue to maintain that the organisational problems are either insoluble or not worth incurring. It is most unusual that a worker, once on a job, is put to other work or that he can get a transfer on his own initiative. He is expected to be a 'specialist at his job'. It is assumed that it is only for one job that he can be a specialist, that he cannot be as proficient and as quick a worker on another.

The point of issue is that of capacity, and an added confusion that between the capacity of the worker and his will to make use of it. It may be true that a worker can only fully learn one job requiring a high degree of skill and experience, and acquire proficiency only through continuous practice. But such jobs are, in general, precisely those which management assume to be interesting. The argument rarely applies to the jobs which management believes to be the least interesting. Continuous practice at any one of them may also increase the worker's knowledge, skill and dexterity; but when it fails to stimulate his interest, when he becomes bored with it, his output may even decline with continued practice. And the costs incurred in introducing change would often be more than offset by resultant improvements in output alone.[1]

That this would generally happen even under present conditions in industry is most likely in the case of workers who could be set to do their present jobs on other machines or at other positions on the production line; the only cost then incurred by the firm would be that of planning the transfer. Often, too, the time required to make a worker proficient at new work is so short that this, the heaviest cost item in introducing variety of work for each worker, is very small. What is certain is that in many factories the cost of change is quite unduly high, and that where the balance seems now to be against introducing variety, it is so in most cases mainly on account of the training methods employed in industry.

They are the same methods as have been used to good effect in centuries past. But modern industry has inherited them with all their faults and none of their earlier advantages. For skilled jobs adequate training meant long training; during the first year or two the trainee would do little besides holding the tools for the skilled worker whose charge he was, and do odd jobs for him. A boy in training to become a fitter would not work with tools regularly until perhaps his third year; a like period passed before, for instance, a prospective glass gatherer was expected to handle a gathering rod. And similarly with other skilled trades for which training periods varied from five to upwards of seven years. Odd jobs enabled the recruit to get about in the factory, to get to know, in a casual way, other people and other processes. The beginners were expected to benefit from the atmosphere, and a kind of acclimatisation undoubtedly took place (34).

Through getting about and trying his hand at a number of jobs, the worker also had variety, and became proficient at a variety of jobs. In the iron and steel industry of less than twenty years ago, for instance, anybody with the physical ability and health could come in and take up labouring work if he was an adult. He gradually, by a system of taking by-shifts, found his

[1] It is different with jobs that require dexterity rather than skill. Though proficiency in them also demands continuous exercise, there cannot be the same assumption about interest. And even where the worker's capacity to master two or more jobs cannot be questioned it may really not be worth the firm's while to incur the costs connected with change.

way into one or other of the different departments of the industry. Boys took up the light jobs, and as they became youths they took up mechanical jobs such as crane-driving, and so on, and gradually took their places in other permanent occupations (35). In many skilled trades this procedure may often be justifiable still (36). What is so disturbing is that shorn of all factors making for variety, and generally, too, of some of the years at the end, it is allowed to persist for many semi-skilled trades. Here also the worker depends on what he is able to pick up "in the going", after receiving a bare minimum of instruction from the foreman or from a worker specially charged but often neither willing nor able to instruct him. It is held to be sufficient that he too should learn from watching the experienced operators around him. Even now many managements are still either "ignorant of the degree of skill required by the different operations and the struggles of the workers to acquire this skill, or they have a blind faith in the ability of the . . . operative to work out (his) own salvation" (37). They fail to see the dangers of leaving training to chance. There is, for example, no guarantee whatever that the trainee will ever satisfactorily learn his trade. He may merely copy diligently all idiosyncrasies of his neighbours which do nothing but increase his own difficulties and fatigue (38). The virtually self-taught worker normally breaks all the basic principles of movement study: it is, for example, very common to find that the right hand alone is performing the job while the left hand is used as a vice (39). All sorts of inefficient methods become stereotyped and are handed on from generation to generation (40), whereas to sound training the trainees themselves often react by trying to reduce the movement necessary in each job and to cut down the waste of materials inevitably associated with training (41).

Even if the danger of failure is avoided, haphazard training entails needless waste of time and money and thus is a needless obstacle to training the worker in more than one operation. He has tended to be made into a specialist at an ever-narrowing task. This is so, for example, in the boot and shoe industry, with the exception of some units in Leicestershire where manufacturers have agreed to train each worker in three processes (42). Whereas it used to be customary in the heavy clothing industry, as in other industries, for the operatives to learn all or at least the greater number of operations connected with the manufacture of the complete garment, now there are in many factories no facilities at all for teaching a new entrant more than a very few operations (43). In the woollen industry also there is "an over-rigid sectionalisation which . . . tends to restrict the best use of talents and labour" (44); and the majority of aircraft factories during the war contented themselves with training raw labour in single operations and assembly work (45).

Firms who pay more attention to training are still in a very small minority (46). This very fact makes other firms reluctant to follow suit. For as long as only a minority of workers are properly trained, a firm stands to gain only untrained workers as replacements for any trained workers it may lose.[1] Hence the argument that training is profitable only in firms which dominate a locality—implying that only a dozen or so firms in the whole of Britain would be wise to undertake it. Hence also the particular shortcomings of training in small firms. Yet in defending the lack of training facilities as one of the inevitable outcomes of labour turnover, it is not normally considered in how far the consequent boredom is a cause of this labour turnover. Nor is it realised that, through employing systematic training methods, the time taken by the newcomer to reach proficiency can often be reduced by one-half and sometimes by more (47). At a time when increased mechanisation makes it at once more desirable and, especially when combined with developments in training methods, more profitable to train workers for a variety of jobs, industry still relies on practices and arguments more appropriate in the last century.

Yet another point is fundamentally of much more importance than any attempts on the part of management to stimulate interest in work through introducing variety: it is that there is no such thing as interesting or uninteresting work. Interest is a subjective not an objective criterion. It is not the work that is interesting or not interesting, but the worker who is or is not interested in it. The most that is conveyed by the assertion that a great and growing amount of industrial work is "bound to be uninteresting" is that, given the personal characteristics, education and general background of most workers, it is more and more likely that they will find it so. Perhaps it is true that not every worker can find work that will interest him in modern industry, though the mere fact that repetitive work is extending is no adequate proof of this. But very little is gained by this generalisation. Workers differ in personal characteristics, education and general background. It is the individual worker who will decide whether the work is 'interesting' or not: the interest lies in the eyes of the beholder; and the judgment of one worker may well differ from that of another, and is even more likely to differ from that of management.

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[1] Conscription, in providing a regular occasion for labour turnover, is making management all the more hesitant of introducing adequate training for its young employees.

That this is so is most obvious from workers' assessments in terms of interest of jobs that are widely different from their own. Sir Wilfred Garrett, one-time H.M. Chief Inspector of Factories, recently cited one case: at the end of the week the girls in a laundry came "as a body to commiserate with the industrial psychologist because they had had a pleasant week dealing with all the nice things that pass through the laundry while she had spent the whole week making dull little marks on pieces of paper" (48). The psychologist probably felt the same way about the laundry work; neither party would have found much interest in the other's task.

There are sharp differences between one worker and another even where the work is very similar, or virtually undistinguishable by the casual observer. Comparatively slight differences between one form of repetition work, for instance, and another produce very different attitudes in the workers, which, in turn, are reflected in large differences in output (49). In an investigation carried out in 1936 in a confectionery factory, "the packing of articles in boxes of different sizes gave rise to marked differences in satisfaction and pleasure in work. . . . The average output of those workers who preferred the large boxes but disliked the small size was 5 per cent. above the group average when employed on large boxes, but was 6·5 per cent. below when filling the small size.

Similarly, the workers who liked the small boxes but disliked the large size produced 7·3 per cent. more when employed on the small boxes, but 5 per cent. less when filling the large size." It seemed reasonable to infer in the situation under review that relative outputs in the slightly different types of work were determined mainly by personal likes and dislikes (50). There is thus no general interest or lack of interest for repetitive work (51). In this matter, as in others, what is one man's meat is another man's poison. And if there are sharp differences in attitude and output due to slight variation in the type of work there can be little doubt that much greater differences would be found between more varied types of industrial work.

Placing workers into jobs which they will find interesting is therefore of the utmost importance. But managements have tended to shirk this issue. In the inter-war period, when there was a shortage of jobs rather than a shortage of workers, it was easy to replace a worker who seemed not to fit into the particular vacancy which he had been asked to fill. The foreman was assumed to know best who 'would do' and in many firms it was he or a promoted wages clerk who was responsible for engaging the workers (52). Often a cursory glance at the line of men at the work gate was held to suffice, though the impression still exists among workers that various forms of bribery, such as standing the foreman regular drinks, were of help in securing selection (53). Often management did not even ascertain whether the chosen few were physically fit to do the work; they tacitly assumed that the applicants ought to know this themselves and, if unfit, reject even this chance of coming off the dole (54).

Haphazard methods of selection and placement were in use even where expensive, long, and arduous training was required before the worker attained proficiency and where there was a high wastage of trainees. Manufacturers of jewellery and silverware, for example, admitted in 1937 that they made "no attempt to secure any ordered system of recruitment. Indeed, though employment throughout the trade should be essentially skilled, in both production and distribution, an appreciable proportion of the recruitment (was) from errand-boys and porters often at an age when a sound grading in the trade should have been already received" (55). In the hosiery trade a "linker's" training used to last from eighteen months to two years or more, and during that time more than nine in ten trainees found that they were, or were found to be, unsuitable. But "no undue disturbance seems to have been caused by these facts. . . . Somehow a sufficient number of operatives . . . managed to survive the difficulties of the learning period" (56).

Even now, industry contains thousands of workers who are chosen and employed in this way. "They are left to make the best of a doubtful situation" (57). During the war there were constant complaints about misplacing (58). In Government as in other establishments no more was done than to eliminate the medically unfit and place the remainder in whatever vacancies happened to be available (59). Currently, too, the need to employ virtually any worker who offers his services gives impetus to the contemporary drive for better training. Yet dislike of an operation is capable of neutralising the positive effect of practice, so that the final output is no greater than at the beginning of the learning period (60). Training can do no more than increase the worker's capacity.

Adequate selection is not a matter merely of introducing selection tests. At their best these can help in measuring the worker's capacity; and should his capacity differ greatly from the requirements of the job for which he is being tested, he can be rejected outright. This line is followed if his capacity is inadequate, but is no less important if it is excessive. Workers of high intelligence, for instance, tend to be unsuitable for repetitive work. For instance, in an experimental investigation into repetitive work carried out in 1924, the most intelligent workers showed the smallest output whilst the leading producer was second lowest in an intelligence test (61). Workers with more than average intelligence attach more importance to opportunities for promotion, to opportunities to use their own ideas, and to work which makes them think. In other words, they feel more strongly the urge to forge ahead and the need for food for thought (62).

On the basis of short tests it is possible to measure intelligence with some accuracy, and also dexterity. But it is impossible to predict even the ultimate capacity of recruits merely from these tests. Some individuals, for example, are inherently incapable of maintaining a uniform (physical) attitude for any length of time (63). Temperamental characteristics which play an important part in determining suitability for repetitive work can again not be measured by means of a short-term test (64). And the same applies to general adaptability and social skills. Longer-term tests may be of use to determine these. School records, for example, are sometimes fairly reliable for examining temperament (65).

But even if capacity could be adequately measured, it could not be an indication of ultimate efficiency. Capacity and performance are different things. Except in the crudest cases, therefore, it is quite wrong to accept or reject workers merely on the basis of test scores. As Professor Mayo puts it, the belief that behaviour can be "predicted before employment on the basis of capacity tests is mainly, if not wholly, mistaken" (66). Nor can employers maintain that they can predict the ultimate efficiency of beginners from their output during the first week. In one experiment it was not until the workers had been employed for approximately six months that forecasts of their ultimate efficiency were anywhere nearly correct; predictions based upon performance during the first weeks would certainly have been misleading (67).

Adequate selection cannot therefore end with tests and probation period. Even the capacity of the worker is likely to change over time. This is accepted as far as physical capacity is concerned, and special provision is normally made for elderly and disabled workers, and often forgotten in assessments of, for example, mental capacity. Changes in temperamental characteristics are virtually never taken into account. Yet whether a worker is or is not interested in his work may well depend more on his likes and dislikes than on his capacity. These are not accurately measured even once by the applicant's answer to the routine question of whether he thinks he will like the work. And they are subject to change and may need to be matched by adjustments in work and environment if interest is to be maintained.

When the level of employment is low management will tend to make such adjustments by changing its workers. In the building trade before the war, for instance, it was only in extreme cases that the agent was compelled to look over his labour force and to give the highly skilled work to a few highly skilled men (68). In times of high employment they must try to make the requisite adjustments in the work, and when having a variety of vacancies may be the better able to do so. This is usually forgotten. And it is altogether likely that immediately more important than any efforts on the part of management to find interesting work for their workers is the freedom of the worker under conditions of high employment to choose this work with some care. No longer is he bound to take the first job that comes his way and force himself as best he may to suit it merely to obtain employment. A great deal of the current heavy labour turn-over in industry may be due to workers genuinely in search for more interesting work. Usually unaided, either by an accurate assessment of their own capabilities and temperamental characteristics or by an adequate guide as to the jobs most likely to suit them, the wandering workers are likely to proceed by trial and error and continue to upset industry. The damage could be reduced in as far as their choice could be made easier and more successful, as through better job classification and vocational guidance. Management's contribution to the solution of the problem lies, not in deciding but in finding out what work interests their workers, and in providing them with it to the limit of their varied abilities.

So far, the managerial approach to the problem of increasing the workers' interest in work has borne strong resemblance to that which employers in the early nineteenth century made to improving conditions of work: they argued that low wages, long hours and children's employment were conditions of industrial progress and hence inseparably bound up with it; the managers of today argue that monotony is inherent in the industrial processes of the twentieth century. Like his progressive ancestor, the modern manager seeks alleviations. The employers found them in the provision of annual outings and Christmas parties for their employees, the managers in music-while-you-work and, to a lesser extent, in rest pauses to break up the working spells.

These attempts to alleviate monotony are relatively new.

Most factories now relaying music to their employees began to do so during the late war. Before it, as in some factories today, even singing tended to be discouraged, though it is the simplest and oldest form of music-while-you-work and to the employer the cheapest, and a wholesome means of escape from boredom; moreover if the song is well chosen, singing can be a stimulant to cheerful feelings and enhanced efficiency. It has tended to be regarded "as a form of frivolity which would desecrate the atmosphere of serious work" (69). Since the installation of gramophone or radio involved expenditure it is hardly surprising that managerial reactions to mechanical music-while-you-work were even more definite. When in 1936 a firm specialising in loudspeakers approached managements to secure their custom, they were met with the views that the idea was "fantastic" and "pampering" the workers, and not to be thought of in connection with serious work. In 1939 only one-tenth of close upon a thousand factories surveyed had music (70) and in 1942 the majority of managements were still unaware of the good effects music could have on production (71).

But by the end of 1946 9,000 large and an uncounted number of small firms were hearing the B.B.C. programmes; some supplemented these by playing records, and others relied wholly on records. In many more factories music might be relayed with benefit. It is a most suitable medium for varying the working environment of the worker. Sometimes the rhythm is mentioned as an aid to production; it is an aid or a hindrance according to the relation it bears to the speed of the operations and the capacities of the workers. Familiar types of dance music with their well-marked rhythm and distinctive melodies are most popular and effective. In one investigation it appeared that the knowledge that music would be played at specific times within the spell of work (generally during alternate half-hours) created a more favourable outlook so that the operatives began the day in a more buoyant and enthusiastic frame of mind (72). A firm reported in 1946 that production was between 12·5 and 15 per cent. greater than normal during the 1–1½ hours following the broadcasting of music; and in an inquiry from the Industrial Welfare Society a year earlier of the 217 firms who answered the questionnaire, 35 claimed that music had increased production directly, 72 that it had improved the standard of output and attention to work, and 143 that a better atmosphere had been created in the shops (73). In some firms the playing of music may have had the incidental effect of lowering the accident rate. Even loud noise in the workshop does not present insuperable difficulties: in the sewing room of a clothing factory, for example, all workers have been provided with earphones, a costly installation but one which has the additional advantages of allowing each operative to choose the times at which she wants to listen and of causing no annoyance to workers whom music might distract from their work.

While music-while-you-work has been introduced mainly with the idea of combating monotony of work, rest pauses on the whole have not. Physiological reasons have been their mainstay. They were applied fairly extensively during the First World War, when large numbers of women were employed in industry: they declined together after it. But in 1939 the majority of large firms at any rate were breaking up their spells of work by means of pauses (74).[1] Eighty-two per cent. of firms operating rest pauses stated that pauses were good for production (75). For continuous repetitive work four-hour intervals between breaks was considered too long, and two hours probably right (76). It is impossible altogether to differentiate between physical and psychological causes, but the more recent studies, at any rate, deal with the subject mainly from the point of view of alleviating monotony of work (77). Spontaneous references by the workers to the effect of pauses on boredom were particularly numerous in one factory where rest pauses had been discontinued by the new management and the change was resented by the workers. Typical statements were, "It used to help a lot when you knew you were having a break—you put on a spurt before the break and afterwards you worked well to the end"; "we used to look forward to the rest, and afterwards time seemed to fly" (78). But many employers were influenced mainly by secondary considerations, notably the need for food by young employees on the morning shift (79). It is not surprising, therefore, that the effects in terms of reduced boredom were often unsatisfactory and further developments consequently discouraged (80).

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[1] The Survey carried out in 1939 covered 1,050 factories in seven areas, i.e. 150 each in and around London, Cardiff, Leeds, Newcastle-upon-Tyne, Glasgow, Birmingham and Manchester, employing altogether 305,000 workers (183,000 men and boys, and 122,000 women and girls). Two-thirds of the firms had rest pauses, though in Leeds and Newcastle it was less than half, and in Cardiff and Glasgow not much more. Less than a quarter of the firms had organised rest pauses in both shifts; in London the percentage was 55.

Many managers were not prepared to give rest pauses a trial. They tended to regard them as unnecessary since "in most industrial work so many interruptions to activity must necessarily occur" (81). Thus the Bedaux system incorporated some rest allowance in the 'unit' and did not require a pause to be introduced from start to finish; refreshment could be taken by the machine and at work (82). It was held that rest pauses raised costs. In an early study "some employers were so convinced of the validity of this argument that they said that the time taken for the compulsory rest would have to be added on to the end of the working day. Other employers demurred to the waste of power produced by taking women off machines run by the same shafting as other machines on which men were employed" (83). The widespread substitution of single electric motor drives for overhead shafting in later years reduced the objection in this form, but there was still the fear that, where men and women worked together, the break would extend to the men also. But apparently the strongest objection was the likelihood of abuse, namely that time would be lost over and above the recognised pauses (84). Nineteen of forty firms reported in 1939 to have abandoned rest pauses gave this as their reason (85). And finally there were the managements who had never given the matter a thought.

In the early months of the late war, when there was considerable pressure on management to work long hours, a number of firms combined a greatly lengthened working day with the abolition of rest pauses (86). Late in 1942 a Parliamentary Committee concluded that rest pauses were uncommon (87). But by the end of the war it had been possible to overcome, in one way or another, all the objections raised against them: the stopping of all machinery, for example, made supervision upon starting very much easier and more effective (88). Rest pauses became "the general rule", at any rate in several major industries (89), and in some of them, notably in the hosiery industry, provision for them was included in post-war national agreements. But the main reason for the progress lies in the wider realisation on the part of managements that rest pauses provide an economic method of combating the effects of exposure to long periods of repetitive work.

In as far as "the possibility of diverting attention from the monotony of work . . . (is) one of the most important human problems in industry" (90), recent progress in its solution has therefore been satisfactory. But it is not very far. The main problem is not diverting attention from monotony, but ensuring that there will be much less of it in industry than there is at present.

In some factories it is said that the great majority of employees are subject to boredom (91). High rates of absenteeism have been attributed largely to lack of interest in repetitive work (92). Output suffers directly. There are many other symptoms of maladjustment: minor disturbances and distractions which would pass unnoticed by the interested worker become exaggerated and intensify still further the emotional background of discontent (93). It is not sufficient that some workers should manage to introduce some variety into their work by setting themselves definite aims, such as the completion of a certain number of units by a certain time, or by evolving attractive designs with the aid of the materials and parts with which they have to deal; or that day-dreaming should often become their normal state of mind (94). The mere fact that many workers accept such conditions "as the customary feature of their daily life" and portray a "philosophical resignation in prevailing circumstances" also means very little one way or the other (95). Large numbers of industrial operatives possess more intelligence than is necessary for the work, and the problem of misfits remains the most important problem in industry (96). For young workers the effects of monotony of work are of very special importance. Many ambitious boys soon become disheartened if they are retained on one particular operation over a long period of time; repetitive work does not sufficiently hold their interest, and their frustrated energy and self-assertion are apt to find other outlets (97). And boredom so early in working life tends to leave a deep impression for many years. Yet there are "thousands of firms who are as yet ignorant" of the existence of the problem of monotony in industry and many more who merely realise that it exists and regret its existence (98). Some indicate their concern by trying to mitigate the effects of the problem. Of the ways to the reduction of the problem itself all are wholly ignorant. The effect of mechanisation and standardisation on interest in work is as yet untouched (99). Thus interest in work is written off as an incentive.

CHAPTER VI

THE SOCIAL STRUCTURE

> "The ordinary conception of management-worker relation as existing between company officials, on the one hand, and an unspecified number of individuals, on the other, is utterly mistaken."
>
> ELTON MAYO—*The Social Problems of an Industrial Civilisation.*

The status of the individual worker — The Working Group: *wholly unacknowledged — the invidious position of supervisory staff — additional hindrances to promotion — the conflict between the informal and formal organisations in industry.*

HAVING, according to many managers, no motive power of his own to urge him to do good work; needing, like a donkey, to see a carrot dangling in front of his nose and to know that a stick is threatening from behind, before he will increase his exertions to promote production; admittedly deprived, by mechanisation, of all interest in work; left to do jobs which are so easy or of so little importance that it is not worth training him to do them; and welfared in all directions with a view to mitigating the unwholesome conditions of work in modern industry and compensating him for the remainder, the industrial worker still does not enjoy much of a standing with management.

A hundred and one things remind him of his low status even *vis-à-vis* the office worker. The office worker is on contract for a week, sometimes for a month; the manual worker normally for an hour. The first is a member of "the staff": the latter is still called a "hand" "by many who ought to know better" (1). They often enter the workplace by different doors, eat in different canteens, work different hours and are subject to different arrangements in sickness and pension funds. When one is ill or when he is late, he gets paid; not so the other. This differentiation goes right through all facets of industrial life. The office worker, as one works manager recently pointed out, "has decent cloakrooms; the factory worker usually either has no doors or only half-doors, because he can't be trusted not to 'mike'. . . . Many other examples could be shown, but they all add up to the lack of status for the manual worker" (2).

So far neither the shift of responsibility for running large sections of modern industry from the owner-employer to the paid manager, nor the advent of conditions of employment in which workers are at greater liberty to choose the firms for which they wish to work, has greatly altered the relationship between those in charge and those they are in charge of. The relationship is still for the most part that of master and servant (3). The worker is paid for selling his labour in much the same way as the trader is paid for the goods he sells; what to do with the worker's effort is open to management's absolute choice, just as the customer has an absolute choice about what to do with the trader's offers. Management expect the worker to do what he is told to do and no more, to ask no questions and to provide no 'cockeyed' ideas. The conditions for this performance are laid down in advance. The industrial worker has, in general, no voice in formulating them. This applies even to the industrial laws he has to obey, though these, being concerned with matter of conduct, are of intimate concern to him. To accept a contribution to their evolution and execution from works councils and joint committees will, it is argued, weaken discipline, "while the idea of allowing workers, through this machinery of industrial democracy, to learn from their mistakes is even more emphatically rejected on the ground that it is contrary to the logic of efficiency" (4). As one colliery manager phrases it, "there is no getting away from it: discipline is a function of management, the worker having the protection of his union against any misuse of that function" (5).

For performing their take-it-or-leave-it task under predetermined conditions the payment of a wage is supposed to be adequate recognition. Little by way of approval, appreciation or encouragement seems to be called for. To the employer who queried this and pointed out that "the most frustrating situation is one where the individual is not clear whether he is giving satisfaction" (6) most managers would no doubt have replied that the worker would know soon and unmistakably if he were not. At a recent foremen's discussion group it was found that, while eighteen foremen had reprimanded someone earlier that day, only two could lay any claim to having given praise (7). It is the general tendency in factory administration to over-emphasise criticism and to ignore praise (8).

This bias is in many respects unsatisfactory. Already without it the workers are liable to be under the impression that management are keen only in finding fault with them. They tend, for instance, to suspect that management dislike them and to seize on every indication that might provide some justification for this suspicion. Often they need not look far. During the late war the distinguished and titled managing director of a firm making one of the biggest and most important war weapons addressed a group of investigators for more than one hour on the impossibility of coping in any way with the selfishness and stupidity of his workpeople, who numbered thousands, mostly highly skilled, and whom he described variously as "beasts", "animals" and "riff-raff" (9). More often firms do little to conceal their dislike of trade unions. In one wartime investigation they numbered one in ten, and several refused to recognise any Trade Union representation or machinery (10). A number of managements, too, "regarded the compulsory introduction of works canteens under the Essential Works Order as the beginning of Communism, and . . . considered the very idea of works councils as equivalent to sabotage" (11). Some hold the view that strikes are the best thing to happen in certain circumstances; and there are those who, for instance, in summarily dismissing certain elected representatives of the workpeople on the grounds of redundancy without prior consultation and agreement invite the course of action which leads to strikes and go-slow movements (12).

Most of the suspicion on the part of the workers is due to their lack of acquaintance with their managers. Especially in the larger firms, the shop manager tends to be an unknown quantity. By virtue of his training, outlook and functions he is often completely preoccupied with the technical aspects of production. To the workshop he is a complete stranger; there is an expectant hush when he puts in appearances in the factory and often a sigh of relief when he departs. For the bias towards criticism makes management appear in the worst possible light, namely, the light in which the workers already expect to see them. "Such contacts as do exist are usually connected with grievances or disciplinary action, when the atmosphere is likely to be strained or hostile. Thus the worker usually sees only one . . . aspect of management. It is therefore not surprising that many workers regard the shop manager as an aloof and superior being, whose function is to blame and not to praise" (13).

Management's tendency to criticise but not to praise has the further effect of also depriving them of a means of encouraging workers to do more than the mere minimum required to avoid criticism. In neglecting this potential, management show unawareness of the important and lasting effect that an open recognition of work well done can have on the worker, while costing the giver nothing but thought and consideration (14). Moreover, in failing to balance criticism with praise and thus acquiring, incidentally, a reputation for fairness and genuine concern, management feel obliged to temper criticism according to every change in the relative bargaining strength of the firm and its workers. Currently, criticism is held to be "unwise"; and much work that now passes without comment would have drawn sharp rebukes at a time when there was less risk of being unable to replace any workers who decided to leave in consequence, or of strikes at the slightest provocation. Expediency, not consistency, has thus become the main guide of management in allocating blame. To the worker the allocation becomes incomprehensible, hence valueless, and another pointer to the "irrational" behaviour of management.

It is a pointer, too, to the proper evaluation of the changed attitude that many firms have recently displayed towards their workers. In most cases as little genuine and lasting change can be inferred from it as is more satisfactory performance implied merely from the absence of criticism. The old pattern of relationship management—worker has not really been discarded. As one employer recently pointed out, "'you're not paid to think' as a managerial slogan dies hard" (15). Another used as simile the relationship of the Victorian father to his sons: "We don't trust other people to think for themselves, and we are far too inclined to impose plans upon them" (16). The gulf between "we", the workers, and "they", the management, persists in industry however great the attempts to cover it up by protestations to the contrary. Management still expects the worker to do what he is told to do. All that has changed is that management have judged it expedient momentarily to reduce their demands on them and to wait for more favourable times.

The Working Group

But of some recognition as an individual the industrial worker is assured: the wheels of production cannot turn without him and his like. Wherever possible it is to him personally and equally personally to each of his mates that management offer incentives in the hope of securing greater production.

Some industrial work presupposes groups of workers and the application of some joint incentive. This is the case, for instance, in heavy manual work that can only be performed by gangs of men; in some skilled work, as in the building industry, where the craftsman requires the assistance of mates; in iron foundry work, in the manufacture of blown glass, and in some sections of the cotton industry. In the manufacture of glass tableware, for instance, the team usually consists of a worker who warms the blowing pipes, one or two workers who gather the molten glass from the furnace, and the glass-blower; the output of each is dependent immediately on the efforts of the other members of the group. Often, therefore, their joint output serves as the basis for an incentive bonus. But group incentives are regarded as second best to incentives for the individual worker, and it is with some satisfaction that management have seen mechanisation increasingly doing away with the need for them. Conveying equipment enables individual workers to do the work that previously required the strenuous efforts of a gang. Machinery is reducing the scope for team work, for example, in the glass and foundry industries. That it does so is one ground for its further application. Nor have group bonuses proved to be of much use as a means of averaging out any errors in the rates: the remedy was found to be worse than the disease; and most engineering firms which had introduced them with this end in view soon after the First World War were disappointed, and were back on straight piece-work by the early thirties (17).

The individual worker may be covered by all the generalisations on which management rely for their dealings with him and his like, as members of their union and as employees of the firm. But as far as production is concerned, his individuality is stressed. He is regarded, together with his machine, as the "primary unit" of production.

Thus, apart from the unifying effect of their joint membership of formal organisations, the influence of workers upon each other's attitudes and practices is unrecognised by all but the very fewest of managements; and the informal organisation of workers into groups, so small that their respective members know each other well and have evolved common attitudes and practices, is almost completely ignored in American as well as in British industry (18). Yet the small, informal working groups, it has been concluded from research carried out in America under Professor Elton Mayo, "exert the strongest kind of influence upon output rates, morale, employee co-operation with or resistance to management; upon absenteeism and labour turn-over; and these group attitudes are more powerful than economic incentives in determining the worker's attitude towards his job" (19).

The degree to which individual views are sunk in group attitudes, and whether the group practices that are evolved are advantageous or detrimental to output depends on many factors. One is the compatibility of group members not only in terms of background but also of proficiency at work. A group of workers of widely different capacities is not likely to be as closely integrated as another where differences are less marked. The backward workers tend to become discouraged and discontented. In an investigation of an English factory, "the general effect of inferior capacity when thrown into relief by proximity to greatly superior ability was the creation of a disgruntled and irritable and sometimes vindictive individual who tended to blame others for her deficiencies. Less frequently the situation created a growing mood of depression, lack of confidence, and uneasiness which reduced output and pleasure in work and made the individual an uncongenial member of the group" (20). Conversely, open friction can arise when the group output is impaired by lack of effort on the part of any of its members. Where differences are slight, however, there can be much co-operation, tolerance and mutual help (21). Small differences in the rates of output between members of a group tend to be evened out, especially when notice is taken of them in arranging the exact positioning of each worker. The output of a slower worker tends to increase when he is moved from the neighbourhood of a yet slower to that of a slightly quicker worker; and vice versa. The most important point is that the output curves of the different workers of a group tend to be remarkably similar in shape, and are undoubtedly influenced by a common factor which can often only be assigned to the existing group attitude (22).

From time to time a worker may make a conscious attempt to keep pace with his neighbour, but usually the resemblance is due to the subtle effect of suggestion: the workers are not aware of their influence on one another; it forms an intangible background and conditions the general nature of their reaction to conditions of work outside as well as inside the factory (23).

The group attitude to output may be good or bad; potentially it is either. Heavy unemployment is likely to lead to joint restriction of output, wartime patriotism to joint increases. Over these conditions management may not have much control. But similar restrictions also occur through fear that management will cut the rates and increases through their assorting the working members well and stimulating them to compete. An interesting feature of an experiment made more than twenty years ago was the unspoken and probably unconscious rivalry between the three workers under investigation and the way in which the speeding up of one subject communicated itself to others (24). A more recent investigation noted how slowing down of activity had communicated itself in the same manner. There, percentage increases varying between 22·7 and 55·7 per cent. were realised when each worker in turn worked in isolation; it was concluded that the group arrangement was responsible for a rate of working which was much below the possible achievements of the individuals concerned. All agreed, for example, that it was possible to work much better when alone and stated that time seemed to pass more quickly when working "hard" (25).[1]

More recent again are successful experiments with vesting considerable responsibility in working groups. Originally because there was a shortage of managers and supervisors to take charge of them, working groups in a wartime engineering plant in the United States were left to make their own arrangements and to organise their work. The result was that, though the physical conditions of work were much less favourable than in the sister plant where the same operations were carried out under traditional management methods, output in the 'group managed' plant was the higher (27). In England too it has been found to be advantageous to ask working groups of skilled workers to estimate the costs, the time to be taken and the rates to be paid, to define methods of manufacture, and to make their own work arrangements for each job (28). Again, competitions between groups of semi-skilled workers that took place occasionally in wartime engineering factories produced situations of great activity when inefficiency of management and of fellow workers were alike strongly censured, and where there was strong incentive to offer suggestions and to co-operate.

Because there is often both a greater urge and a greater scope for getting together and integrating more closely, the views of different members of the group can be particularly powerful in repetitive work (29): operatives are often more concerned about their working companions than about such matters as wages, promotion, or hours of work as long as these are reasonably normal (30). The clearer the dependence between his own output and the efforts of others and total output is to the individual worker, the stronger is his instinct that he must not "let the party down" (31). Workers sometimes force themselves to go back to work, though still unwell, for fear of being permanently parted from their mates if their absence were prolonged, and affinity with their working mates is often the main reason why workers refuse to be transferred to different or even promoted more lucrative jobs (32).

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[1] The removal of a co-worker from the group had an interesting effect also on the workers that remained behind. Those who were doing work of a similar kind to that done by the operator who happened to be the one to work in isolation increased their outputs by percentages varying from 9·5 to 40·3. This was attributed to a "general principle that an individual is compelled to greater activity when he knows that others employed on the same kind of work may be 'stealing the march'": it was suggested that if he is familiar with their rate of progress he tends to adjust his own activities accordingly (26).

Management will continue to be unable to understand many things as long as they remain unaware of the informal group structure in their workplaces and its influences, and unable to enlist group attitudes in promoting the firm's purposes. So far they pay little attention to ensuring that recruits fit in, even on score of capacity, with the workers around them; often a worker's output is as much as twice his neighbour's. They move workers about without considering the effects on the working groups they leave or on those they join (33). They eschew group in favour of individual incentives, though as regards bonus payments, for example, individual payment may do more harm than good through lowering morals and increasing administrative costs (34). And they take no account of the informal structure in determining the organisation of the firm and the personnel of management.

The effects of this ignorance are especially serious and obvious at the lowest level of management, the immediate supervisor. It is agreed on both sides of the Atlantic that "the relationship between first-line supervisors and the individual workman is of more importance in determining the attitude, morale, general happiness and efficiency of the employee than any other single factor", certainly more important than the best conditions of work and the most carefully selected body of employees (35). A worker stated in a letter to *The Times* that what had struck him most forcibly in industry was " the extent to which general morale—and *consequently the productivity*—of any workshop is related to the personality of one or two pivotal people such as foremen and leading hands" (36). It is not merely that if the supervisor is satisfied with low output and slipshod work it is likely that the whole of his working group will deteriorate to that level (37). Upon him depends the use of the numberless psychological stimuli to work; and it is he who must discover the workers' likes and dislikes and communicate them to management and, conversely, interpret managerial policy to the workers on the floor. It is not surprising therefore that co-operativeness should be regarded by the workers as the most important qualification for a foreman, and that lack of this quality is often the direct cause of restriction of output by the workers (38). In one firm, pre-war, a comparison of the output produced in one department with that obtained under similar conditions in an adjoining room showed a balance in favour of the latter of 17·8 per cent. The only noticeable difference between the two departments was the ways in which the two forewomen carried out their supervision. The difference in output may well have been largely due to the repressive and unsympathetic methods adopted by the forewoman in the less productive department (39).

It is not normal to select foremen on the basis of their capacity for co-operation: considerations of personality have so far played little part in selection. "The majority of the foremen and supervisors in British industry today have been selected . . . on one ground and on one ground only—skill in the particular task which is to be supervised. . . . Yet this is as reasonable as selecting a corps of officers for an army on the basis of individual excellence at drill" (40). That was written in 1933. It had been pointed out already a decade earlier (41). It is still much the same today: candidates "are regarded as competent or otherwise in terms merely of their theoretical knowledge and practical skill": organising ability, commercial capacity and aptitude in managing workpeople are regarded as the mere exercise of common sense to the technician and as requiring neither special instruction nor particular qualities (42). He is born with them. As one firm stated in answer to questions concerning the training facilities it provided for supervisors, "when selected for the position of foreman the person is given a short training, generally in the form of spending a few days with the retiring holder of the position. When pronounced competent he assumes charge" (43). This, commented a works manager, is how the loss of a good workman becomes the gain of an indifferent foreman (44).

The worker promoted in this fashion is then probably in a position which combines the worst of two worlds. As management's representative on the floor and as a member of the staff he is expected, as a matter of course, to take management's point of view. But he is never really part of management. His background, for instance, usually speaks against it. Brought up in the hard practical school of manual work, he has behind him many years' experience as a workman of greater or less skill, until that day came when he was pitchforked into a type of work for which he may or may not be suited, and of which he had had no previous experience (45). This change in status did not wipe out his past. By the time too that the day came, he may have grown to be an old man, older, perhaps, than his works manager; this is especially likely to have happened in firms where foremanship is still regarded as a reward for long service and when normally a vacancy only occurs when somebody retires from working life, often, that is, after thirty years of foremanship (46). Hence, incidentally, the belief, regarded in some quarters as universal in the lower ranks of industry, that promotion means less work and that foremanship is a sinecure (47). Against it, too, speaks his standard of living. Often he earns less than the skilled workmen under him. In the London area in the summer of 1946 an increase of 10*s*. per week and in a number of cases 30*s*. per week was required to raise the weekly earnings of all foremen to £10 per week (48). By standard of life as well as by family background and education the foreman usually remains a worker.

This makes it immediately easier for him to get on well with the workers: he at least understands them. And if he is one of the many who are promoted straight from the ranks to supervise the department in which they have worked their way up, he has the added advantage of knowing of the friendly groupings and individual aversions, and of blood relationships and marriage affinities, which can greatly facilitate the smooth running of the workshop (49).

All would be well, therefore, if there were no strains between management and workers. But strains are almost inevitable. Where the relations between management and worker are permanently bad the workers will immediately resent the new foreman for having accepted the position, and thus gone over into "the other camp". Even where relations are normally good, strains are almost certain to develop as the foreman exercises his responsibilities, particularly those connected with discipline. He is in any case uneasy about exerting his powers on what are often his former mates and very susceptible to all signs of resentment from them. Resentment will follow him from the factory to his social life outside. Where no effort is made either to educate him beforehand in the company's policy towards its employees or to find out whether or not he is in sympathy with it, a further conflict is added (50). The more serious the conflicts and the more seriously he takes them, the more will he tend to withdraw from the factory floor and to build up all the defences and rules of action that go with social isolation. He restricts his contact with the workers to a minimum and takes refuge in that paper work which serves at once to keep him busy and to give him a sense of importance and achievement. In a recent investigation it was found that the workers "seemed to have very little contact with supervisors and were scarcely aware of their existence" (51). Many a foreman is well aware of this, but cannot help but gather all the characteristics that he used to dislike in the foremen under whom he worked in his time, notably aloofness, bitterness and a bias towards criticising at the slightest provocation: he is liable to draw the conclusion that these are inevitably connected with his position. According to one works manager, many a foreman faced with these conflicts but without formal training, and "with repeated correction of recurrent errors for his only guidance and imitation his only instructor, evolves for himself after years of experience some . . . rules of thumb. In the circumstances it is natural for him to be a law unto himself. He is in fact the boss of his department, with the power to indulge his whims and fancies" (52). He becomes impatient of management and hard on the worker, and tends to project his frustration into the working groups.

From the point of view of the worker on the floor, many changes are obviously required, even apart from such fundamental alterations as a general improvement in management–worker relations that alone can make the supervisor's position an attractive one for most workers, before the prospect of promotion is as important an incentive to work as it should be in modern industry and as many managers think it already is. The prevalent technical bias in selection needs to be offset by greater emphasis on personal qualities. Again, it is still quite usual to leave the workers in the dark as to the posts which are open to them, the training and experience that are regarded as essential qualifications for candidates, and the methods by which workers are chosen for promotion. And, as F. C. Hooper points out, "men in many businesses simply don't believe that they can climb up to management, because there is no means of training as a ladder of promotion" (53). In many industries promotion is quite haphazard, and rightly or wrongly the feeling is widespread that it depends more on whom you know, on standing the foreman a drink with some regularity, than on what you are and what you know (54). Charges of graft and favouritism are rife where, for example, supervisors are normally appointed on the recommendation of the foreman with the approval of the shop manager; this procedure was adopted in some Royal Ordnance filling factories during the war and caused much dissatisfaction (55). At other establishments promotion is merely a question of chance, in others again of seniority (56). And the current generation of supervisory staffs who have attained their positions despite these handicaps, or perhaps even because of them, are for the most part no believers in more rapid or more systematic promotion or in paving the way for subordinates (57). It is, in fact, with a certain satisfaction that management watch the continuation of this obstacle race in pitch dark: for only the 'toughest' will survive. From among these are chosen a great many supervisors in British industry.

Again, in endeavouring to balance the number of candidates against the number of posts open to them, management have tended to pay attention almost exclusively to reducing the number of candidates. This number is often considerable (58); even among women, over 30 per cent. have been found to be keen on undertaking supervision (59). On occasion the lack of opportunity for normal advancement may have been a major cause of unrest (60). It is, of course, true that only a small minority of workers can be advanced to supervisory grades and that, since vacancies depend largely on the turnover of staff, it is the firms that tend to retain their employees longest that are less able to offer them promotion than are their rivals who have a greater turn-over for some reason, e.g. because of bad management or location or because they employ more women. But promotion need not be restricted to supervisory positions, and by subdividing the hierarchy of an organisation it may be possible usefully to increase the number of positions open to promotion (61); nor need promotion always entail financial advantages. From the training stage onwards manufacturers could do much more to encourage successful workers by improving their status or increasing their wages (62). Virtually all workers could be given the opportunity to rise above their normal positions. The advantages, in this connection, of high turn-over of staff can be more than offset by sound managerial policy. In one firm, dominating a locality and having, partly for that reason, a low labour turn-over, 30 per cent. of the youth who enter the company's employment eventually fill positions upwards of charge-hand. It is clearly not sufficient for employees to point out that "prospects of promotion on the production side are inadequate" (63) and to accept this position as unalterable.

All these improvements are desirable. But no increase in the opportunities for promotion and no improvement in the selection of candidates can get over the fact that many workers, otherwise keen on promotion and suitable for it, are not prepared to face the conflicts between management and workers that are liable to arise under present methods of organisation; they will simply not offer themselves for selection. For the firm their defection means, firstly, that it may have to be content with the second-best in supervisory positions. Good training may enable these to sail with greater skill and confidence than they would have done without it between the Scylla of current management policies and methods and the Charybdis of the workers' attitudes and practices; but it cannot solve their dilemma. It means, secondly, that the value of promotion as an incentive is reduced, not merely because the workers who stand back are not influenced by it, but also because the rest of the workers tend to know whether the best possible supervisors have been chosen and are not likely to be satisfied with the explanation that the best did not offer themselves for selection. Thirdly, the workers who have chosen to refuse upgrading within the firm's organisation are liable to seek advancement in other directions. Of all the ways by which industry reduces the large number of workers who are suitable for promotion to the small number of supervisory positions it has to offer, this is by far the most unhappy.

As a result, each firm is likely to have not one but two organisations on its floors: one is the formal organisation, as shown on organisational charts, in which the foremen and charge-hands are the middlemen between management and workers; the other is the informal organisation of workers in small groups and of working groups among each other, complete with its own informal leaders. The supervisors tend to be fully accepted by the working groups—and thus to be able to get to know the structure of the informal organisation and the continual changes in it, as also the complicated patterns of motivation behind the attitudes and practices of working groups—only if they have the workers' approval in what they pass on to the higher levels of management and what consequential actions they take. Thus, though a supervisor may "get on well with" the workers, higher management may remain completely ignorant of what really goes on on the production floors. Alternatively the supervisors may work unreservedly with management, in which case they are likely to add their ignorance to that of higher management.

Normally the choice is not theirs to take. The nearer management have approached to the realisation that they are unable to fathom the attitudes and practices of their workers, the more securely have they tried to tie supervisors to management policies. Some firms have acknowledged the division outright and have taken to relying for their supervisory staff on people drawn in specially from outside and with a background more akin to that of higher management than to that of the workers. Especially when candidates enter the firm straight from secondary school or technical college as trainees for foremanship, they are unlikely to acquire complete understanding of the workers and be unreservedly accepted by them. Moreover, regular recruitment of outsiders for supervisory positions limits yet further the workers' opportunities for promotion.

More often management have mistaken the focal points of friction for its cause, and transferred from the control of supervisors to higher and, by implication, more competent levels of management the functions that appear to have resulted in the greatest amount of contention between management and workers. Thus personnel officers are charged with carrying out disciplinary functions, and not merely with pronouncing independent judgments on their exercise by the supervisors (for which their position would seem to qualify them better). Workers are also permitted and often encouraged to approach personnel officers over the heads of their foremen and often without their knowledge in matters affecting their conditions of work. Where action is left in the supervisors' hands it is often action without responsibility: regulations are issued for their guidance that are so detailed as to leave no scope for adaptation to the particular circumstances with which they are to deal. Again, managers with greater confidence in their own powers of persuasion, and often under the impression that personal contact between them and their workers is all that is required to solve the differences between them, do not hesitate to approach their workers direct to consult and take decisions with them. Yet often no more has been changed by these procedures than that the points of conflict have multiplied and have been diffused through the organisation; at the same time, the supervisors, even if they are sufficiently *au fait* with what goes on in the working groups to devise suitable action, are powerless to take it and thus give workers added cause to approach direct the higher levels of management where real responsibility resides.

The basic dilemma comes to an end only when workers and managers agree that their purposes coincide and on the methods and organisation required to carry them out. Under these conditions the members of the different working groups are associated with the appointment of first-line supervisors. Often these will be their informal leaders. This is all the more likely if detailed supervision ceases to be the full-time function of a clearly demarcated grade of the organisation. At one time, in the engineering industry, each of numerous groups of workers had a 'leading hand'. He was normally a skilled man of several years' standing with the firm; in addition to doing the work of a skilled worker, he was responsible for the performance of the whole group. He is no longer much in evidence: the charge-hand and foreman have taken his place. Only very rarely do they work with the workmen; normally they have one function only, supervision, a specialisation that marks them off clearly from the workers. Probably the large number of supervisory staff apparently required in industry—there are estimated to be more than 500,000—is at least in part a reflection of the loss of responsibility of working groups for their own supervision. Little attention has so far been paid to the question whether the functional division in industrial organisation should not be confined to ranks higher than first-line supervisors, and status thus accorded to the working group.

CHAPTER VII

JOINT CONSULTATION

"My idea is that joint production committees are a waste of time. My hope is to get the workers to take the same view."
Labour manager responsible for group of factories (1)

The prerequisites — the three results of the deliberate reintroduction of consultation into modern industry: 1. the avoidance of the core — 2. the need to retrain lost habits — 3. excessive formality and its connection with centralised authority — the confusion between "policy making" and "policy execution".

IN allowing responsibility to be divorced from leadership and the attitudes and practices of workers to remain for long periods seriously at variance with their own, management have unwittingly built up among the workers serious opposition to change. A group leader, for example, who has attained his position mainly through his opposition to management, is likely to attempt to stop all changes which appear to reduce his influence in the working group and is virtually certain to succeed at least in retarding their progress. As the wishes of the group diverge progressively further from the tenets of his platform his hold becomes more precarious; eventually it will depend on constant vigilance and action on his part; and finally it will pass away. But the two can diverge far before a break occurs. This was indicated, for instance, by the trend of production of a group of girls in an English factory: when the group leader was absent the output of the remaining members of the group showed an average increase of 12·5 per cent. over that of the preceding and following weeks when she was present (2). The number of group leaders with similar influence is likely to increase with every attempt on the part of management to narrow the gap between themselves and the workers. And they will probably be able to exert an influence altogether out of proportion to their number. They can prolong their tenure by playing on all the age-old suspicions that the workers entertain about management. And management can prolong it for them by excessive impatience with the rate of progress, by all inconsistencies, real or apparent, and by holding things back from the workers. It is an essential step in the re-establishment of confidence that management should lay their cards on the table, face upwards, and talk things over with their workers. Joint consultation is the name given to this activity. By pursuing it management will also introduce new incentives for the workers, namely those of general and long-term interest in their activities and in the activities of their firms.

If, therefore, joint consultation is regarded as "something to keep them quiet" it is, as one group of employers realises, foredoomed to failure (3). The same applies, according to another employer, if it is attempted "as an underhand way of minimising the influence of the trade unions" (4), and in firms, where management are under the impression that to encourage their workers to think is really the last thing they want: as one firm put it to a group of sociologists who asked for their co-operation in promoting discussion groups among industrial workers, why should they be encouraged to think when they already have brains enough to do the not very complicated work that the company required? (5). Nor is it sufficient for management to have consultation forced upon them and to concede not as much as they can but as little as they must (6). Again, management's recognition of the worker *qua* person, and of his rights to join workers' organisations and to think, must come first. Contrary to the expectations of some firms, consultation will not compensate for deficiencies in industrial relations (7). Instead, it will be foiled by them.

Only when these matters are being satisfactorily dealt with is it profitable to acknowledge also what a group of psychologists and psychiatrists recently termed the workers' "right of collaborative discussion on specific tasks" (8). Joint consultation then becomes, as an employer points out in connection with suggestions, "not a matter of a man being accorded the privilege, *although* an employee . . . of offering suggestions; but rather of his having a recognised responsibility for doing so *because* he is an employee and therefore a joint partner of the enterprise" (9). As such, it has been suggested, he should be associated not only with policies relating to physical conditions of work and general welfare, but also with such matters as the framing of work rules and disciplinary action, the solving of production problems, and the selection of supervisory staff; and he should be provided with information about the business "as least as full as that given to the shareholders" (10). According to a recent study, the acknowledgment that he makes this contribution as of right will then also reassure the worker that his insistent demand for recognition as a responsible human being is to be permanently satisfied (11). But all this depends, in an employer's phrase, on "the mutual acceptance of the doctrine that the common interest of the management and the workers transcends their divergent interests; that it is to their mutual benefit to come together and pool ideas and experiences in regard to all questions which may be solved in a manner advantageous to both" (12). And until this conception of the relationship of employer and employed obtains in practice "joint consultation is liable to be dangerous in operation and will assuredly be disappointing in its results" (13).

It is not as if this mutual acceptance were new. Joint consultation, even in accordance with the conception of joint responsibility, is as old as industry itself. It may have been called by another name; or, more likely still, it may not have had a name to itself. The greater the skill of any craftsman the more reason there has been for the employer to obtain his opinion on one or other development or method of work. That is so to this day. Today, too, workers engaged in small firms where the "we" and "they" complex has no roots are liable to be consulted on all sorts of matters without finding it at all extraordinary. It is in the units that are typical of modern industry that this conception is "quite new" (14). Yet it is to them of even greater importance. In the first place, as Professor Mayo points out, the failure of free communication between management and workers in modern large-scale industry accounts for the exercise of caution by the working group until such time as it knows clearly the range and meaning of changes imposed from above (15). The failure is especially important also because it has tended to accompany the loss of other incentives, notably those of the worker's interest in his task and of the stimuli of the small working group headed by the boss himself.—

That joint consultation has had to be deliberately reintroduced to modern industry has had three important results. Firstly, mainly so that it should not upset the *status quo*, it has had to return, as it were, by the backdoor, and to reach the footlights by devious ways. The first efforts were generally concerned with the workers' welfare and safety, matters which "concerned them most". The habit of consulting grew with the volume and extent of collective bargaining on wages, hours and other conditions of work. Production issues were raised via the workers' suggestions for technical improvements in the methods and the organisation of their work. This was the thin end of the wedge: for, with consultation on one production issue established nothing was any longer safe from it: personnel, sales and finance—in one way or another all activities of the firm affect production.

The wheel has turned full circle. And comprehensiveness has been rediscovered as the main criterion of the success of consultation (16). In connection with welfare, the Working Party for the hosiery industry found that consultation "may be the only way of convincing the workers that the scheme is for their benefit" (17). When in an American wartime plant the workers were effectively associated with planning their own courses and methods of training it was found that they invariably set a higher standard for themselves than the time-and-motion people had worked out for the job, and in actual work even tended to better these standards (18). In the silk ribbon industry in New York joint committees take the examinations of candidates wishing to enter certain classes of operatives (19). A British firm, following the experiments in the Armed Forces with "leaderless groups", asked its employees to submit the names of candidates for promotion and found that they had chosen well; another found that, though it had no deliberate policy to this end, most of its junior executives had at one time occupied official positions with the operatives' trade union (20). Others consult with the men what adjustments to make in employment in order to meet recessions in trade, whom to lay off, or whether to work short-time. Changes in work methods and organisations are affected much more satisfactorily when they are the result of consultation (21). Many kinds of grievances never arise when the workers are associated with the decisions, such as the fixing of rates, that usually give rise to them; and others are settled early by consultation (22). This applies even to matters of discipline: not only have some managers asked their workers to help in setting factory standards of opinion and conduct; they have also entrusted the enforcement of discipline to bodies of their employees without ever having had serious reason to regret their action (23). On production itself, workers' suggestions have, in the words of the Amalgamated Engineering Union, been "neither spectacular nor what one would call 'bright'; they are almost always of the Columbus egg type, so simple that they appear obvious once they have been demonstrated" (24). But there can be many of them and a high percentage can be of use. Usually the workers are better placed than anybody else to suggest, for example, new incentives to work (25). Where consultation is fully developed no matter of any importance which directly affects the workers is settled without discussing it with them (26).

Openly and continuously consulted the workers tend to find their customary practices challenged by intelligence and to evolve an "informal organisation which will not only express more adequately their own values and significances but also is more likely to be in harmony with the aims of management" (27). This does not require agreement to be reached on all points: men who have followed the debate at least know the reasons and arguments which led to the decision and are more likely to carry it out. An employer's answer "to those who argue that such an admission means the end of discipline and control, and the opening of the door to anarchy of every kind (is that) in practice this has not been so" (28). The usual effect of the new relationship on management is that it demands a standard of administrative efficiency at least equivalent to the technical efficiency for which it is responsible (29). And even for this alone, some firms regard it as essential. The workers are informed of and are able to make adjustments to impending changes over which the firm has no control; they bring to the notice of management matters that need to be dealt with if efficiency is to be maintained and increased; and they are sounded on the wisdom of intended action and their agreement secured while the idea is still in embryo and before much time is wasted in working out the details. Joint participation, according to these firms, pays.

The second result of having deliberately to reintroduce joint consultation after a long absence is that the habit of consultation has had to be reformed by both sides. Four stages can be discerned in this process. During the first, management show willingness to answer queries from their workers relating to conditions of work and other matters or at least to explain why it is not possible to answer questions concerning, for example, costs and finance. Not all employers have yet passed through this stage. Some firms in the wool industry, for instance, feel satisfied that there is no need to explain to the workers how their total weekly wage is arrived at: the workers get it "and there is no trouble whatever. If there is any trouble," they explained to an official board of inquiry, "it is confined to the officials of the Employers' Federation and the Trade Unions" (30); at others the employees are sent back with the explanation that "it is all decimals" and they would not be able to understand (31). Yet the liberty to question management and the certainty of obtaining at least an explanation can prevent many grievances from assuming serious proportions and is an essential first step in the re-establishment of consultation.

It is only a short way from this stage to the next, when management, keen to forestall the rise of grievances due to the workers' ignorance and to provide them with the knowledge that is a prerequisite to their taking an interest in their work and its relation to the firm's activities, freely issue information to their employees. The transition was particularly clear in an engineering factory where the employees refused to be satisfied with any explanation and persisted in a request to be paid on Wednesday instead of on Friday night. "At first the management resisted this demand, owing to the difficulties they would have experienced in reorganising the system of accountancy and staff work. . . . The issue became so grave that it reached the managing director. He developed his argument, (which) was received with scepticism. So he thought of showing them how the wage packet each worker received on Friday was arrived at. . . . The delegates were given a morning (on full pay) and shown the whole working of the accountancy, bookkeeping and banking departments. They were impressed. . . . The demand was dropped without ill feeling, and this chance development . . . developed into a regular system of the management showing one group of workers in the factory how another group worked, with results which they regard as beneficial to morale and production" (32). The same instinct of self-protection and self-justification have prompted a number of firms to make post-war material shortages and other difficulties the occasion for increasing the amount of information of general business nature passed on to the workers.

There is an obvious case for providing each worker, in advance of questions, with information that will make it clear to him what he is doing and why he is doing it. During a recent visit to a factory in South Wales it was observed that one fitter, personally known to the observer as a conscientious worker, was working at snail's pace. It appeared, upon questioning, that he was under the impression that he was wasting good material to make parts of which there was eleven years' supply. He was unaware that, owing to greatly increased usage, the stocks were sufficient for only fourteen days (33). That payment by result is insufficient to maintain the workers' output under such conditions was confirmed when it was attempted to keep an experiment in an English chocolate factory going despite a genuine shortage of work. The finished tins, instead of being despatched for sale, were emptied in the factory and returned to the experimental group. As soon as the workers realised that the products were not for sale but were being returned in order to keep them employed they began to lose interest in the process although they continued to be paid by results (34). The investigators at the Hawthorne experiment generalised from similar experience that "where social conditions are such as to make it difficult for the worker to identify his task with a socially meaningful function he is liable to obsessive response and diminished capacity for work" (35).

Conversely, increased output has frequently been noted to follow the distribution of information about industrial processes allied to those carried out by a particular group of workers (36). Only when they know where they stand as links in the chain of production is it profitable to move further outwards and stress the social significance of the production of the workshop. When during the First World War the Department of Shipyard Labour instituted talks with workmen in various shipbuilding districts about the rôles that were being played by naval and merchant ships, they observed the most stimulating effect. There was "less time lost, less sleeping on night work, fewer stoppages of work, greater expedition, and larger output" (37). Similarly during the late war: "When vital production at small subcontracting firms was lagging, what put output up was to explain and illustrate how the particular bits and pieces that were made were essential parts of a gun, or a tank, or an aeroplane which was badly needed. The small engineering jobs fell into their place in the scheme of war production and the output of the workers went up" (38). In the opinion of a worker, "nothing is appreciated more—whether it be at the bench or in the office—than to be told just what the particular job on hand is all about. Details such as why the job is necessary, why it has to be done in a certain way and perhaps in a certain time, why the cost is so important, and the relation to the overall activities of the firm—are all important facts that should be put over" (39).

Financial and sales data should as far as possible be included. New methods of deploying workers in the factory, for instance, are much more likely to achieve their purpose if the workers know the calculations that preceded them (40). But more information is required also simply as an essential first step in removing the false impressions that are normally the only ones workers have on the subject of finance. During the late war production in shipyards was retarded because the workers were misinformed on two points: the first was that cargo vessels built for private owners contained a great many refinements not specified in those built on Admiralty account and were designed with a view to post-war requirements; and the other that Admiralty contracts for ships were on a "cost-plus" basis and that shipbuilders were thereby encouraged to waste labour and materials (41). And, overriding all, is the continued insistence on the part of the workers that they receive an unduly small portion of the proceeds of industry (42). Instead of knowing that profits accounted for only 3 per cent. of turnover, the workers in a large American factory, for example, believed that they accounted for 25 per cent. (43).

Altogether much more of management's time must be devoted to explaining things to employees. Lord McGowan's list of desirable additions includes information on balance sheets, market problems, raw material difficulties and expansion programmes (44). Only on such groundwork is it possible to build stage three in which the workers are asked to deliberate with management on points which management raises with them, and stage four, in which the workers bring up their own points for discussion.

The third result of having had to reintroduce joint consultation deliberately, has been its tendency to become excessively formal. It has become a matter of committees and schemes, elaborate production charts and target figures, organised mass visits to other parts of the works and joint addresses in the canteen by management and trade union, rather than of the foreman's chat with Bill at his machine and the calling over of Joe from maintenance to give his side of the story—in short of that continuous consultation which makes it a natural part of the workshop procedure and liable to arouse no more notice than clocking on or off.

The dangers arising from the formality of consultation in modern industry have received quite inadequate attention. In the first place, formality limits consultation by adding resistances from the workers to the methods of consultation, to any resistances they might entertain to its idea and subjects. Many good workers are adverse to being singled out for sitting on a committee or to having "a great fuss" made over what they have to say, whereas they would not mind at all, and in fact like very much, being asked for help in an informal way.

As it is, the obstacles, for instance to eliciting suggestions from them, are considerable. The workers hold them back for fear of ridicule from fellow workers; they doubt whether the suggestion can possibly be of any value; they wonder whether the foreman will be upset for being bothered or for not having thought of it himself. To these obstacles management add those of formal procedures; often the thoughtlessness that has caused them is quite staggering, as is its implications. To be able to participate in the suggestion scheme the worker must usually fill in a printed form—at all times an abhorrent requirement to most workers. Often the form can be obtained only from the foreman, who is naturally at once suspicious: after all, it might concern him personally or some of his actions or omissions. Even where the requisite form is obtainable from a neutral, only the foreman can usually arrange for technical help to be given to the worker should he require it, and should there be any provision for help. The completed form must then be placed in a box which hangs, for worthy reasons of publicity, in full view of work-mates, near 'the clock' or the time-clerk's or foreman's office. If despite all these obstacles a suggestion does reach the box on the right form, weeks often pass before the suggestion is rejected summarily by whoever deals with such matters and the rejection is conveyed to the worker, possibly by means of a printed note, possibly by word of mouth, and possibly by a somewhat gleeful foreman.

Again, it takes, almost by definition, longer to work through formal procedure than to discuss and settle matters informally. And with every increase in the time lag between suggestion, or discussion, and action wanes the satisfaction to be derived from consultation. With it, too, grows any suspicion of abuse that might be entertained, as well as impatience and frustration. The workers become afraid, for instance, that some minor executive has crushed their suggestion "lest he should, when it comes to be considered, be reproached for not having thought of it himself"; or that the supervisor to whom they submitted their ideas is "sitting on them" in order to produce them later as his own (45); or that management is using joint discussion only in order to be able more impudently to mark time in between committee sittings.

The two related dangers are that none but a few workers will take part in consultation and that these few will tend to lose touch with their fellow workers. They are at once most likely to occur and most serious where consultation tends to be concentrated in committees: most likely because indirect consultation, that is consultation via representatives, will not give as great a sense of participation as direct consultation to the workers generally, and will tend to single out workers' representatives and set them up as a separate and special group; most serious because with interest in consultation stagnating in the works, the best men may not offer themselves for election, and interest may stagnate further and the value of consultation be wholly called in question through lack of ability and success of the workers' representatives in the committees. It is not only in firms like that in the linoleum industry, where the worker members are not elected by the workers but selected by management, that the ineffectiveness of consultation must be largely a foregone conclusion (46). It is quite frequent that the worker members of joint committees are unrepresentative. In many firms it is accepted that shop stewards should *ex officio* be the workers' representatives also on joint committees, and no separate elections are held. This is questionable enough in firms where all workers are enrolled in a trade union; where trade union membership is not complete it amounts to a disfranchisement of all non-union workers. Again, an important weakness of agreements to establish joint production committees has been the absence of arrangements for re-election (47). Shift workers present a special problem. In an air-engine works during the war, for example, the workers who were permanently on night-shift were never consulted about production or other matters nor asked to take part in the election of "their" representative, even though night-shift workers represented as much as one-quarter of the workers employed by the firm. Even initially their enthusiasm for consultation in committee was somewhat damped. As lack of contact causes loss of interest and lack of interest second-rate representation and further loss of contact, elections cease to be taken seriously by workers as well as by management, and re-elections are held only when some representative wishes to lay down his position of doubtful honour (48). Thus consultation twists its way downwards in a vicious circle towards complete ineffectiveness. It is sped on by refusals on the part of management to allow workers' representatives recognised 'time off' for discussion with their constituents and inadequate facilities for writing their reports and recommendations, and by relying on the display of minutes on the notice-board and on the occasional issue of printed matter for maintaining general interest (49). Thus the gap of ignorance between management and the general body of workers is not narrowed but hardened; all that has happened is that a handful of workers are now on the other side of it.

Some firms have managed to avoid the extreme results of their emphasis on formal consultation without tackling the core of the problem. They use better procedures for their suggestion schemes: for instance, the worker may put any scrap of paper in the box; his suggestion is acknowledged immediately and examined by a joint committee; should decision on it be delayed, for instance by the need to construct prototypes, he is kept informed of progress; and should it, after all, be finally turned down, he is provided with a full explanation and sometimes even with the minutes of the discussions relating to it. Again, worker members of committees are encouraged and enabled to report back to their constituents, the number of committees is increased so that more workers get involved, and proper care is taken over their election. And the resistances to participation are reduced and sometimes overcome by rewarding participants with money and publicity for successful suggestions, with enhanced status and privileges for membership of committees. But these are only expedients and on their own their success is limited: they do not remove the dangers entailed by the emphasis on formal consultation and they are not able to ensure that consultation stimulates interest and action in the large body of workers.

Only a strong growth of direct, informal consultation can make the factory safe for consultation and broaden the basis of appeal. Suggestions so small that they would not be noticed by the formal machinery, grievances that can be settled by immediate discussion, consultation with the individual working groups on targets and requirements, and joint discussions on methods of production and grouping of workers, and on all the detailed adjustments that have to be continuously made to take account of the continuous changes affecting the working groups and the individual workers—only these, and in this detail, can provide for that frequent consultation on matters closely affecting the workers which is required in order to permeate the whole factory with information, suggestions, joint discussions and decisions that are of close interest to virtually every worker. Only matters of wider interest and importance need to be discussed at higher levels, where consultation has of necessity to be formalised.

But consultation cannot be effective and will not spontaneously and informally take place below that level in the hierarchy of an organisation at which the relevant decisions are reached or from which it can exert an appreciable influence on the decisions. In this respect consultation differs from mere discussion. The higher the level of authority the less detailed and the more formal is joint consultation. As responsibility and control have been removed from the working group to the foreman and, increasingly, from the foreman to the personnel officer and the higher levels of management, consultation has moved up also, and become more formal and less detailed and interesting to the worker on the floor. If the need deliberately to reintroduce consultation into modern industry has been the main cause for the initial emphasis on formal consultation, the removal of responsibility higher and higher up the industrial hierarchy has become the main cause for maintaining it. Informal consultation demands decentralised control.

In most firms attempts to consult extensively are premature. Many have not yet made the adjustments in the status of the manual worker and in industrial relations, though generally these are the prerequisites of effective consultation. For the most part the older industries and particularly the highly localised industries, such as shipbuilding, clothing, cotton and wool, and the potteries, for instance, still cling to the belief that authority in the industrial hierarchy is incompatible with discussion. Especially firms that were progressive by nineteenth-century standards have found it difficult to make what would have amounted to a sharp break with the attitudes that formed the basis of those standards. Little consultation seems to take place, for example, in the potteries with their strong patriarchal traditions (50). Elsewhere, as in the heavy industries of shipbuilding and iron and steel, memories of heavy unemployment and prolonged industrial strife accentuate the difficulties, and it is often only when these industries have been introduced into new areas or been leavened in their traditional areas by new industries introduced from outside that they have found it possible to change. Other firms have mixed up the stages through which consultation must pass if it is to be effectively and permanently reintroduced. For instance, the management in many firms, while reluctant to pass on information as the basis for effective discussion, boast the establishment of numerous committees with lengthy agendas. Others, again, hold back information for reasons that have nothing to do with a general lack of desire to consult: it is felt, for example, that even fewer workers would consent to stay in certain strenuous or dirty or otherwise ill-reputed jobs if they knew more about other types of work.

But of the objections entertained by the remaining firms against extending consultation to the full, most are based on an inadequate appreciation of the implications of the close connection between the levels of responsibility and control and the levels of effective consultation. It is stated, for example, that even as it is consultation wastes a great amount of time: that only the smallest number of suggestions from the workers are of any use to the firm; that the worker members of committees concern themselves with small details that are of little interest to other committee members and gain little from general discussion, and that among these there are an inordinate number of grievances and complaints; and that consultation with the workpeople is resented by the foremen. The one conclusion that is never drawn is that these failings might be due to deficiencies of consultation—and authority—at lower levels. Most suggestions should never reach formality, but be turned down on the shop floor, possibly with the aid of the technical staff; others should only reach it if they are adopted and the workers are entitled to reward. It is a shortcoming in the organisation of the firm if worker members have to take up committee time in talking about such small items as a broken chair in Department A, the need to speed up transport from machine to machine in Department B and the inadequate lighting of a passage-way. And if there is an excess of grievances, it probably means that other channels for airing them are non-existent or ineffective as ways to action, or that management assume what one employer has called the attitude of "we-are-here-to-listen-to-you-what-are-your-complaints" (51)—and the workers tell them. And the complaints of the supervisory staff are justified because they are not being sufficiently drawn in, and matters which ought to have been theirs to deal with, and on which they certainly should have been asked to express an opinion, are discussed and settled above their heads. In many cases, informal consultation, far from being expanded into an adequate foundation for consultation at higher levels, is regarded as an alternative to it, and is allowed to wither away as formal consultation grows in profusion. All sorts of information that used to pass direct to the place of action are now diverted to pass over committee tables and under the scrutiny of people who might be better employed; and much administrative action bides its time in the same way and place.

Thus, consultation as a function has been lost from sight. What apparently remains is the right of the workers to be consulted and, as it were, to rubber-stamp managerial action before it takes effect; and committees are the platform on which the workers can score telling points against management and from which they can interfere with the functions of management. Management, for their part, have not found it difficult to persuade themselves that consultation is in fact half-way to workers' control of industry, and, in reality, therefore, to be resisted. The trend seems unmistakable. Matters of welfare that were once subject to consultation with the workers are now, in some firms, under their control, and workers are even allowed freedom in spending the funds allocated to them by the firm. Further, in firms practising co-partnership the workers have joined the employers in the direction of the enterprise and also share in the profits. There are firms in which the works council can, by a simple majority, reach authoritative decisions on virtually all points and where they can expend, without necessarily securing the agreement of the directors, specified amounts of capital and allocate up to one-half of the firm's profits (52). There are the co-operative producers' societies in which they seem completely to share control. And into the very insistence of trade unions on the establishment of joint consultation machinery all over industry it is easy and sometimes justifiable to read that they regard consultation as the thin end of the wedge to workers' control.

The fear is based, as a group of employers has pointed out, on a confusion between the function of "policy making" and "policy execution". The workers, *qua* workers, need to share in the formulating policy. It is execution that is "the function of management and must be the sole responsibility of one person at any one level" (53); Rowntree compares it to the function of the railway guard who is required to "order" the engine driver to start (54). The confusion is made worse by the habit of regarding consultation as something high and mighty, ceremoniously carried out at the higher levels of any organisation and through the regional to the national level, for single industries as well as for all industry. And in it has got lost the value of consultation in enabling the worker on the floor to participate in the decisions that affect his work and well-being and to attach a value to and take an interest in his work and surroundings as part of the firm and the productive effort of industry and nation.

PART III

Responsibilities for Change

CHAPTER VIII

THE CURSE OF UNIFORMITY

> "There is no need to stress the disadvantages arising from individual firms starting incentive schemes of widely varying types compared with a really sound national agreement. . . ."
>
> Letter in *The Times* (1)

Variety in industry and the case for minimum standards — official promotion of uniformity — the greater importance of joint national agreements — based on the growth of national organisations and the trade unions' success in raising minimum standards.

BRITAIN's industries are made up of close on two hundred thousand firms. Some are centuries old, others have no tradition. Most are very small, employing less than ten workers each. A few are very large; and sometimes, as in the case of the nationalised industries, embrace whole trades and employ several hundred thousand workers. But the great majority of the six million or so industrial workers are employed in firms that also give work to between 250 and 2,000 of their mates. Each is engaged in one or another of industrial tasks that number, when grouped on the lines of the Census of Occupations, rather more than 3,000. Some mind automatic machines of various kinds; others work entirely with their hands; others again use tools and machines of many thousand different descriptions. They work in all sorts of environments—in little huts under railway bridges, in model factories on trading estates, in mines, on building sites, in shipyards, in light or dark, in clear or dusty atmospheres, in surroundings of varied cleanliness. There are men and women of all ages, of different backgrounds and with varying aspirations, working in twos or threes or hundreds or, occasionally, alone. They are subject to all sorts of rules and regulations, and to all sorts of people, who fill positions in many different types of administrative machinery. And all parts of this exceedingly complex pattern that is British industry are subject to continuous change.

This variety in physical and psychological conditions of work obviously precludes success in the application of uniform incentives throughout industry or even throughout any one industry. The further complexity of the problems of motivation themselves underlines this conclusion. Even where these seem upon superficial analysis to be identical in any two workplaces, they are not really alike at any time, even if only because workers and supervisors who are employed by the one are different from those employed by the other and influenced by different considerations. There are almost invariably differences even in the influences that affect the workers collectively in either place. Past unemployment, for instance, has left its marks on some districts more than on others; and the fear that unemployment will occur again is conditioned by this varied experience. Again, personal and technical changes within the workplace, are not distributed evenly between them: yet in all their diversity they affect the problems of providing adequate incentives for the workers in each. In short, however similar this or that aspect of production or of working conditions in different workplaces, and even if some features are in fact alike, the total situation, the whole pattern of influences affecting the situation, in the one is undoubtedly not matched by the pattern in the other.

Time sets an additional limitation on the degree of uniformity that can be usefully attained in the application of incentives. Nowhere is the pattern static. Change is continuous inside as outside each workplace. That this is so is obvious if two widely separated periods of industrial history are compared. The influences of the small medieval community and the conditions of work in the paternal establishment of the gilds will readily be admitted to have differed sharply from the influences reigning in a modern industrial town and the conditions on the assembly line of a million-pound automobile plant. But the changes that led to these sharp differences form a long series of which each part was not, in itself, drastic. In the same way, and to accumulate eventually into equally sharp differences, changes go on continuously from day to day in modern industry. To remain effective, incentives must be equally continuously adjusted to suit them. But by their very nature, rationalisation, unification must await the facts, must follow changes and adjustments at some distance; they become practicable, if at all, only when first the one and then the other have shaken down into recognisable patterns. Thus not only must uniform incentives fail to take account of the innumerable differences that exist between different working groups so absolutely that their effect is likely to be very small, not to be felt, as Nigel Balchin has put it, "on a wet Monday morning" (2), but they are liable also to be substantially behind the times; how far depends on the speed at which changes are taking place and the degree of uniformity that is the aim.

This is the case for the prevention of all interference with the diversification of incentives to meet the diverse requirements of industry. It is unlikely that much uniformity will emerge naturally; if it does it must be in the course of uninhibited development and be purely coincidental.

The case for some imposed uniformity rests on different premises. It is asserted, for instance, that management do not know the most advantageous assortment of incentives to fit this or that group of workers; that is, far from knowing, as they often state, what is good for the workers, they do not even know what is good for the firm. Alternatively, managerial methods, though perhaps successful, at any rate at a particular time and place, in stimulating workers to do greater work, interfere with the success of applying incentives elsewhere or at a later date, or more often, conflict with long-term social objectives. In short, some standards may be required to ensure that firms who are unmindful of their duties connected with providing for their own long-term future who may gain unfair advantages over their rivals in the same trade and district, or may fail their wider, social obligations, correct their ways on pain of being found out and in some way punished. Immediately, the contribution of minimum standards to the search for adequate incentives is undoubtedly negative: they detract from the range of means at the disposal of management for dealing with the problems of incentives. No longer can firms pay their workers wholly by the piece or without the security of a fall-back wage, though this might well have provided a strong financial incentive. No longer can they require of their workers the attainment of a certain standard of performance as a prerequisite for granting annual holidays, or the accepted length of working week, or for taking women and young people off nightwork, or for providing safe conditions of work. The positive contribution of imposed standards of performance is a long-term social one and affects the problem of providing adequate incentives mainly by altering the conditions in which it has to be solved—an influence essentially similar to that of the social services.

Altogether their scope is limited. They can usefully cover items, such as wages, hours, and physical welfare, that are required by all and can be easily checked and enforced. In addition, they can lay down the lines of procedure to be adopted in developing some of the remainder, such as selection and training, the issue of information to the employees, consultation and of ways of dealing with this or that problem. But there is here already danger of confusion: no procedural standards can ensure that the worker will in fact be trained or well placed, that he will be properly selected or usefully informed, or, in short, that any of these matters will 'work' in addition to 'exist'. And for such real issues as the influences of working groups and supervisors, and confidence on the part of the workers in the efficiency and goodwill of management, standards cannot be laid down at all. But of overriding importance is that the case for uniformity begins and ends with the establishment of genuine minimum standards. This implies, firstly, that the standards are sufficiently low to allow for wide variations, and, secondly, that management in fact make use of this latitude. For applying fixed, unvarying standards there is whether in theory or in practice, no case at all.

This assessment of the case for uniformity rests on one assumption: that incentives must be adjusted to particular industrial situations. The assumption seems unassailable and has, in fact, never been repudiated. But for many years past, and at no time more than in post-war Britain, there has been persistent and largely successful pressure to raise minimum standards, to narrow the scope for variations, and, finally, to convert, in fact if not in word, minimum standards into fixed standards, and to fix rigidly also detailed lines of procedure where standards of performance cannot be assumed. Implicitly, the assumption has thus been reversed: industrial situations are or should become sufficiently uniform to enable higher production to be attained through the application of uniform incentives.

This drive for uniformity has, alongside many others with the same objective, received a great deal of official encouragement. But action on the part of Government has not been mainly responsible for it. Partly this is due to the realisation on the part of the majority of members alike of legislature and executive that the differences between industries are too wide and too obvious to be ignored. There is doubt, too, whether rules and regulations can be adequately enforced if they demand too much of management; and, even when they can be enforced, whether they can in fact hope to meet the problem.

The experience of Factory Acts which lay down minimum standards of working conditions and safety is not reassuring. Conditions of war and aftermath cannot be held to excuse altogether the fact that "the present standard of health provisions of welfare amenities in many factories is much below the legal minimum standard" (3). Nor is this state of affairs due mainly to the noted tendency for factory inspectors to pay a disproportionate amount of attention to conditions in the firms where management is known to be helpful, instead of giving it to bad firms, even though they may regard them as hopeless (4). Several working parties, at any rate, came away with the impression that "a real improvement in conditions is not easily accomplished through the setting of standards by legislation, but must be the product of the initiative of the employers after consultation with the trade unions" (5), and that "in the matter of welfare, as in many others, success depends on the attitude of mind of people in the industry rather than on the letter of the law" (6).

Much the same conclusion can be drawn from the compulsory appointment of personnel officers during the war in factories each employing over 250 workers. Over 1,550 firms of that size had full-time personnel officers already before the war (7). By 1941 their number had been greatly increased, and some 90 per cent. of firms employing over 500 workers were covered; and as the war proceeded the number increased further. But already in 1941 the then Chief Inspector of Factories had to point out that "the many complaints show that the system is not supported in a way to make it a success" (8).

Appointment by compulsion had combined several evils: firstly, the existing hierarchy of management tended to resent it, partly because of the very manner in which it had to be made, partly because they felt that it was really unnecessary and yet at their expense; secondly, the status rather than the function of personnel officers came to be stressed, a tendency in which most officers at least acquiesced; and thirdly, it led management into the belief that, now that they had somebody specifically appointed and paid for looking after personnel problems, they themselves could stop worrying about the workers and get on with the job of production.

These evils interacted and the result was greater than the sum of the parts. There were many unsuitable appointments. It is quite true that, because of the ever narrowing supply of potential managers towards the latter part of the war, men and women had to be placed in executive personnel management positions "who had not the slightest talent or training for such work" (9). But this was itself due in a large degree to the lack of status of personnel managers in industry and to the small salaries consequently offered to applicants: in some firms they were to receive less than half the wages drawn by the workers in the shop. Among many workers personnel management enjoyed the reputation of attracting predominantly people who were willing to go into any occupation as long as it exempted them from service with the armed forces, and were qualified accordingly.

Tacked on the established organisation in order to comply with the requirements of officialdom or the demands of a managing director's conscience rather than to meet a recognised need, personnel officers were in many cases bound to encounter friction, especially with those executives who had taken a pride in dealing "very satisfactorily" alongside their other business with all the matters that were now to be purveyed by the new member of the staff. Where higher management could not get accustomed to the change or where they were in agreement with the managing director who regarded the greater attention devoted to the well-being of workpeople as "undoubtedly a very necessary wartime activity tending to lessen the incidence of the minor annoyances of war", and hence temporary, no serious adjustments were made in the organisational structure of the firm (10). The personnel officer was allowed to carry out a very minimum of functions and, for the rest of his time, given something better to do. He was set busy, for example, on the ragtag and bobtail of industrial problems, such as the effects of new legislation, form filling and returns (11). This further discouraged the better types of recruit from coming forward and led many personnel officers to battle continuously for the freer exercise of their proper functions and the grant of proper status. At the very end of the war, when most firms employing more than 250 workers had had, perforce, some years' experience of personnel management, it could not yet be recorded by the then President of the Institute of Personnel Managers, that even the majority of employers were convinced that personnel management was "a necessary part of business organisation". Many still regarded it as "a new and suspicious cult" (12).

This is not to gainsay the very considerable value of Factory Acts and similar legislation in increasing the welfare of the workers—and often, even immediately, their performance—as Sir Wilfred Garrett put it, "in all the factories of the country and not merely in the favoured few where management have seen the light" without official guidance (13). Moreover, official standards are apparently still sufficiently low to allow of wide variations in industry. Again, compulsory appointments of personnel officers were not invariably useless. In some factories able personnel managers found the rest of management so unreservedly glad to leave personnel problems to their special care, or so busy, that useful personnel functions emerged, unnoticed, in their organisations. In one firm which had been run on tough lines, for example, a new welfare manager insisted on better working conditions and on the installation of a canteen, and his efforts were accompanied by heavy reductions in absenteeism. Less definite results were more frequent: firms became members of one or other of the institutes and organisations which concern themselves specially with human problems in industry or even merely subscribers to a professional journal; and many managers were made conscious of the scope of labour problems even where they could not be brought far along the road to their solutions. But Factory Acts cannot guarantee a high standard of welfare, and the mere existence of personnel managers could not dispel the lack of awareness on the part of management in general; conversely, the absence of a full-time personnel officer did not necessarily denote that a firm was unable to deal adequately with labour problems. In fact, with the end of the war, the employment of personnel officers ceased to be compulsory.

If such difficulties are encountered in connection with the establishment of minimum standards in such relatively simple matters as welfare provision and organisation, it is inevitable that official interference with the much more complex factors that are normally of greater importance in shaping the pattern of incentives at any workplace has tended to be either disastrous or, more often, merely ineffective. Disaster has overtaken it whenever it has outlasted the purpose it was intended to meet. This happened, for instance, in the case of the cotton industry. Its Uniform List of Wages became subject to legal sanction in the early thirties in order to prevent competitive wage-cutting. The legal sanction remained until the early forties, by which time the minimum standards set down in the List had in fact become maximum standards. Thus Government after Government had become associated with the maintenance of a wage structure that was wholly unsuited to the needs of the industry. Something similar took place in the building industry during the war and the two years following its end. During the war the industry was compelled, for the sake of higher output and lower costs, to introduce systems of payment by results. No doubt, too, this action allayed criticism that the Government was extravagant in its building contracts and was failing to employ "obvious means" to reduce public expenditure. But as long as the contractor was paid on the basis of cost plus profit, payment by result amounted, according to one observer in the industry, to plain bribery (14). As soon as cost-plus finished, the position was reversed and the Ministry of Works sanctioned the joint national agreement, negotiated by both sides of the industry, for the abolition of payment by results; firms which genuinely wished after that time to give a financial incentive to their workers were either prevented altogether from doing so or took refuge in subcontracting or other *de facto* but not *de jure* systems of payment by results (15). Since then the industry has again been urged to devise and apply its own system. Regulation by Trade Boards provides another field in which official sanction is sometimes given to standards which are by no means even in the interests of the industry, and certainly not in that of British industry in general (16).

Yet the Government persists on learning by bitter experience that direct official attempts to provide incentives cannot be very effective. It was surely obvious that the prospect of a visit to the Ruhr or of a free ticket to the football Final could only stimulate the fewest of miners; and that the incidence was bound to be even smaller in the case of attempts to reward high output in a district by visits of £1,000 per week variety shows, which had to be turned down by the workers themselves before they were abandoned as a serious contribution to increasing output (17).

Again, even during the war, when the appeal to patriotism and selfless effort was naturally at its strongest, direct appeals to the workers from outside the factories to increase their output were often useless; general lectures by outsiders were liable to be received with utter scepticism, even when they consisted of "a bald recital of facts". This was so wherever the workers were not already alive to the issues (18). Peacetime clarified additional difficulties: in times of changing shortages of raw materials and fuel there are many workers whose output is restricted by factors outside their control or who are even laid off work; these, far from finding appeals for higher output stimulating, are liable to resent them and be permanently inured to exhortation from like source (19).

Finally, in appealing over the heads of management direct to the workers, national publicity and rewards tend to undermine the responsibility of management which it would be wiser to strengthen. Yet the Government persisted in these efforts for two and a half years after the war before they devolved a major part of the responsibility for relating the efforts of the firm to national and international objectives on individual managements and began to see their own efforts to be predominantly in the field of advising them and circulating data on the experience of other firms in the use of different media of publicity.—

The differences between industries, which have so far tended to restrict direct official intervention in the establishment of national standards to the narrow field of regulating physical conditions of work, could not detain the joint progress towards uniformity of employees and workpeople negotiating for single industries. The official reasons for supporting their collective agreements appear strong: the negotiators on both sides can be assumed to be experts in their industry and representative of the views of its employees and workers; and they are obviously keen to see their agreements carried out. Both sides of industry are therefore continuously encouraged to negotiate on all major aspects of incentives "as affecting the industry", and national agreements are the main media for promoting uniformity.

That differences within an industry are generally quite as important and should also be quite as obvious as differences between industries tends to be ignored. This is largely inevitable once negotiations start on a national basis. Often the limited number of negotiators cannot directly represent even the major trades or sizes of firms comprised by the industry. Almost invariably it includes only national figures who see the major contours of a problem but neglect its detail, and who tend to be connected with and be biassed in favour of the large firms. The small trades and small units tend to be ignored or their continued existence even deplored because they stand in the way of enforcing standards. In the building industry, for example, conditions and methods vary more widely than in most, from the two- or three-man repair gang to the highly mechanised contractor for factory premises or for large speculative or local authority estates. There are further marked differences between different parts of the country. And all these are additional to the variations between working groups and individual workers. A few years ago nobody would have dreamt of imposing uniform incentives on such an industry. Now nothing but uniform incentives are acceptable and great benefits are foreshadowed from "a really sound national arrangement prepared and agreed by contractors, operatives and quantity surveyors" (20).

Hardly any subject seems to escape the drive to uniformity. The length of the working week has been settled on a national basis, and in the summer of 1947 the coal industry decided to join those trades that manage to fix nationally the distribution of working hours also. Recruitment, training and guaranteed weeks are subjects for national agreements. During the war joint consultation in the form of joint committees was introduced, by means of agreements, to a majority of firms each employing more than 250 workers. At one time joint consultative machinery probably covered as many as 3·5 million workers, of whom more than 2·5 million were engaged in the engineering and allied industries and the majority of the remainder in the coal-mining industry; 40 out of 42 Royal Ordnance Factories had their joint production committees, as also had some 95 per cent. of private shipyards. 1,100 coal-mines and virtually all Royal Dockyards, Admiralty and Air Ministry establishments, and Ministry of Works contractors employing more than 200 workers were covered. There were other committees in the transport industry, and one even in agriculture (21).

Again, it is not as if the wage rates or working hours agreed by the two sides of an industry at national level still represented minimum standards of performance on the part of the firms or that the installation of certain training procedures or joint committees were merely recommended to them. For the most part national agreements demand not only acceptance in general but conformity in detail, generally even without the option, of improving on the standards there laid down. Already before the war the payment of wages above or the working of hours below national standards tended to be confined more and more to a few large firms in any trade; and most of these preferred not to advertise their defection. The war provided only a temporary respite from this tendency and, in the post-war years, the trend towards uniformity has greatly accelerated.

Thus, early in 1948, when Coventry Corporation decided to pay more than the nationally agreed rates to its transport employees it was blamed for a dispute in Midland municipal transport undertakings and subjected to severe criticism from the Joint Industrial Council. The same Corporation's decision to pay building labourers 2*s*. 6*d*. per hour instead of the 2*s*. 2½*d*. as provided for by a recent building trade agreement drew letters of complaint not only from the Coventry branches of the

National Federation of Building Trade Operatives and of the Transport and General Workers Union, but also from the Ministry of Health (22). About the same time employer and worker members of working parties complained that some firms were trying to offset the deterrent effects of bad working conditions on recruitment and output by paying higher wages, and recommended not that minimum standards of provision be enforced but that the payment of higher wages should be officially prevented (23). And the Government in its quest to stop inflation obliged in as far as they laid down that it was "essential that there should be the strictest adherence to the terms of collective agreements", that "departure from the agreed conditions by individual employers, whether public authorities or private concerns, will inevitably constitute a grave danger to the stability of collective bargaining, and may well lead to competitive bargaining", and that they could not "stress too highly the importance which they attach to this principle" (24). Again, when the cotton firm of John Bury and Company shortened working hours without waiting for a national agreement for the same purpose they received a letter of protest from the Cotton Spinners' and Manufacturers' Association which was justified on the same basis, namely that "unilateral action at individual firms on matters of far-reaching consequence strikes at the whole principle of collective bargaining upon which our industrial structure at present fundamentally rests" (25).

That the imposition during the war of a particular form of joint consultative machinery on a large variety of firms was anything but a success has been widely acknowledged. Only just over one-half of the firms who replied to a survey carried out in 1943 by the Engineering and Allied Employers' Federation considered their joint production committees wholly satisfactory; one in eight considered them to be wholly useless. And as is usual in surveys of this kind, the replies put an unduly favourable construction on the real state of affairs. The Ministry of Fuel and Power found that only one in four pit production committees was functioning "really effectively", and that one in three was "almost ineffective for the purposes for which it was set up" (26). In other heavy industries, like shipbuilding, matters of production were not even formally submitted for discussion until the middle of the war (27). Nor does any value attach to such assertions as that contained in a wartime survey of sixty firms in the aircraft industry, to the effect that 70 per cent. of the items on the agenda related to production: for firstly, that they appeared on the agenda does not denote that useful discussion ensued; and, secondly, among production problems were included welfare, grievances of all sorts and large doses of absenteeism (28). That many committees had been of little value was emphasised again when, despite strong pressure from trade union and other quarters, they declined in number and scope after the war, when there was also little sign of the development of formal consultation in the consumer industries as these resumed their peacetime importance (29). One firm after another of those who wished to persevere with joint consultation "found it necessary to reconstruct their wartime organisation" (30). The due termination of joint agreements that had forced large sections of industry into such an unsatisfactory mould might well therefore have been regarded as a good riddance. Instead, there has been pressure, in and out of Parliament, to make joint production committees compulsory by law (31).

This drive for uniformity is the resultant of two main factors: the first is the continuous growth in scope and strength of national organisations on both the employers' and the workers' sides. It is natural that uniformity should spread with them. For in their expansion from highly localised organisations into area, district and finally national organisations they encounter all sorts of variations which seem to harry the general body of their members. Employers who pay lower wages or work longer hours or train their workers inadequately are taken to enjoy unfair advantages over their co-members; in the same way workers who are prepared to be thus exploited endanger the position of their mates. These anomalies have therefore to be removed. It is little realised that the centralisation of negotiations brings ever new crops of anomalies. In the payment of wages the position has been reached where the great complexity of current wage structures in many major industries is in large part due to the very attempts of management to conform with successive changes in area, district, and national rates, and provides at the same time a powerful argument in favour of a final, large-scale cleaning up, in which all local variations can be abolished, and in which the wages of each class of worker can be related "scientifically" to those of every other class in the same industry. Ever since 1919 when the engineering unions managed to insert a clause in a joint agreement to the effect that rates for bonus payments should be fixed so as to enable the worker of average ability to earn a certain percentage above his basic wage, it has been accepted that incentive payments can be largely controlled in the same national manner.

How easy it is to proceed from laying down rates of basic and incentive payment to laying down the methods by which wages are to be calculated is well shown in the Interim Report of the Cotton Manufacturing Commission issued in 1948. The Commission recommended a uniform method of payment for the whole non-automatic weaving section of the cotton industry. This, they thought, followed naturally from the provisions of the Cotton Manufacturing Industry (Temporary Provisions) Act of 1934 and certain rulings later made under it. In fact an arbitration board set up in 1935 specifically disclaimed responsibility for fixing the method used by any firm in arriving at the minimum figures. The real reason for the uniformity with which one method has been applied is that under a rationally conceived wage system the legally enforced minimum wages could not be paid unless the firm's total wages bill were substantially increased. In insisting upon its one method of paying wages the Commission is not only brushing aside other authoritative methods, such as those submitted by the Shirley Institute and a firm of industrial consultants, but is also likely to create the maximum resistance to all change. But, most important, it is likely to put even greater obstacles in the way of future technical developments requiring adjustments in wage payments than the Uniform List has done in the past. What little progress had been made in reassessing workloads in the cotton industry had, after all, to depend on the very liberty of firms to make adjustments in their methods of paying wages (32). Uniform methods appeal to that very neatness that really is its disastrous feature. Unfortunately, the difficulties which still foil the attempts, for instance, of the engineering and coal-mining industries to secure the desired simplification are not likely permanently to hold up this process and there can be no doubt that, if present trends continue, it will be a matter of a few years at most before wage payments will be the same for the same class of workers all over the country (33).

The second factor making for uniformity is the ability of the organised workers to raise standard wages and to lower standard hours whenever their bargaining strength is greater than the employers', and to hold on to the gains through less favourable times. The purpose of minimum standards has long been forgotten: in many industries, minimum wages, for instance, are so high that incentive payments hold little attraction. Management, on the other hand, faced with continual pressure for 'minima' that are more favourable to the workers, are naturally equally continuously eager to explain that they cannot afford them. But their case is weak unless they can show a united front, unless minimum rates are those that are actually paid, maximum hours those that are actually worked, and unless an increase in the one and a decrease in the other would mean immediate alteration in the general practice in the whole industry. Hence their indignation at any firm which falls out of line with this policy and thus provides immediate material for further claims for more favourable national minima. Hence the managerial support for uniformity, though uniformity reduces the weapons at their disposal to deal with the problem of incentives:

Firstly, uniformity is promoted specifically, so that there remains no room for adjustment to the needs of a particular factory or workshop. The workers' request that they should be allowed to do 13 weeks' work in 12 and take a week's holiday every quarter has to be refused because national agreements govern hours of work (34). It is equally difficult to reward increased effort by higher wages. It has not been noticed that, in thus imposing standards on any one industry, another form of integration has been lost, namely that between the local standards of the industries that happen to be situated in any particular locality. Inevitably new anomalies have been created: the wage that compares favourably in one area with that paid in other local industries compares unfavourably with that paid in a different set of industries in another. In a mining area with little employment for women workers, wages for work in the hosiery industry, for example, are sufficiently high to upset the existing social and industrial pattern; in the Midlands the same wages cannot compete with those paid in light engineering factories. Though these local anomalies tend to be more important than the differences between areas, and though they have been caused by the imposition of those very uniform standards that have removed the geographical differences, there is no suggestion of making the adherence to national standards less rigid. Instead, it is proposed that there should be further uniformity, this time between industries; in short, that what is required is a National Wages Policy. With less publicity, hours have tended to truly national uniformity long since.

Secondly, the sense of responsibility for finding and applying the best incentives has been removed from the hands of individual managements along with the responsibility for them. Workers obtain increases in wages, reductions in hours, and training, welfare and consultation arrangements often without having asked for them; sometimes though they have asked for something different; generally without having played any real part in formulating the changes. They are not concerned, for the very good reason that these matters have ceased to be their concern. Moreover it evidently pays them to sit and wait. Management is in a similar position. Most are uneasily aware that, despite all national efforts, the problem of providing adequate incentives remains on their hands. But they are equally aware that the means to a solution have been taken out of them. Hence management's lack of lasting interest in the possibility of increasing output by providing stronger incentives for their workers, and their prevailing feeling of frustration.

CHAPTER IX

SCOPE FOR MANAGEMENT

> ". . . if the same degree of intelligence were applied to the understanding of people as to the understanding of machines, an enormous amount of trouble due to wasted effort . . . could be avoided."
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> Industrial Health Research Board (1)

The varied efficiency with which incentives are applied in industry — the two main causes of deficiency: ignorance and resistance to change — the real but limited scope for co-operation and the responsibility of individual managements.

THE need to conform to uniform standards has made large inroads into the range of means at management's disposal to deal with the problems of providing adequate incentives for their workers. But no amount of zeal in that direction can eat up even the greater part, and certainly not, as is sometimes implied by management's inaction, the whole of it. The wide variations that exist in the efficiency with which incentives are applied in industry bear witness to the latitude that remains.

A small number of firms have realised the full potentialities of a large range of incentives in suiting them to their own particular conditions. It is not possible to give even a remotely accurate estimate of their number.[1] The only thing that is certain is that the majority of successful firms are small and that in the case of a number of them success in the application of incentives helps to account for their continued existence in the face of bigger rivals which often are technically greatly superior. Many may not have heard of the Industrial Health

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[1] The statement, made in the middle of the war by H.M. Chief Inspector of Factories, that personnel relations were satisfactory in 69 per cent. of factories employing over 250 workers each is largely irrelevant (2). It means little more than that there was no friction in these workplaces of sufficient seriousness to catch the attention of a visiting factory inspector or to be brought to his notice through the outbreak of a dispute. Nor can it be accepted that the reference of a point of disagreement to arbitration means necessarily that personnel relations are unsatisfactory. And with the success or failure of management's attempts to stimulate their workers to raise production the assessment does not deal at all.

Research Board or of any of the other institutions that have studied the subject; indeed, they may have never given systematic thought to problems of incentives. Incentives in their workshops are geared to close personal contact and relation between workpeople and boss. There may be no conscious experiment; but the effects of changes taking place outside as well as inside the workplace are likely to become clear with such speed that all adjustments made in the workroom are in fact experimental. It is easily seen, for example, whether a new worker "fits in" or whether he gets on well with his job, or whether the workers are worried about conditions obtaining outside. And since the fount of authority is likely to be on the job, the decision to make or reverse a change need not be long delayed. There is therefore a good chance that adjustment to changing conditions is so continuous that incentives as a problem never arises. Many small firms have the added advantages of being able to offer their workers varied or skilled handcraft work. Technically and from the 'welfare' point of view conditions may be bad; but good work may be done none the less and with greater satisfaction to the worker than is gained by his friend who works in a larger and more modern factory down the road.

The success of the handful of larger firms is built on altogether different foundations. To them incentives present problems to be carefully analysed and tackled with deliberation. In their case the gap between management and workers might well have been wide. But through sound organisation and through employing good people in administrative positions and securing advice on major aspects of the problems from competent outside sources, they manage to keep themselves informed on developments inside and outside the workplace; to carry out or, at any rate, co-operate in, experiments; and continuously to make suitable adjustments. Some large firms, with a tradition and reputation for a high standard of management, showed up well during the late war when they underwent considerable expansion and took on large numbers of new workers, yet were able to maintain their standards, with the result that the workers were contented and worked well and absenteeism was low (3).

Many more firms have limited success with one type of incentive or another. Where these are alert to the possibilities of further development they may progress rapidly towards achieving a full range. For upon following up the effectiveness of one incentive, management is likely to be led to the recognition of others. There are firms which only recently started from one small aspect and reached within a few months a policy of which the comprehensiveness is the most interesting characteristic. For many, the unusual difficulties of attracting workers to certain occupations, due immediately to the high level of employment in post-war Britain, or the plain impossibility of starting up production in new areas without altering traditional methods of management have provided occasions for rapid development and diversification. Several hosiery firms, for instance, were forced to give thorough attention to the systematic training of operatives. Immediately deficiencies in the physical conditions of work were encountered: the working benches were of the wrong height, seating arrangements were inept and lighting was totally inadequate. The endeavour to reduce the turnover of trainees led to improvements in selection procedure and to greater attention to physical health. By then the anomalous position of the supervisory staff had been high-lighted, and in at least one firm it was decided to try to arrange the operatives in small working groups so that they would take over the major burden of disciplinary functions.

It is quite true that the larger firms' scope for action may be unusually wide. Often they feel less hampered than many other firms by the customs of the trade, and feel at liberty to break out into new lines of action, partly because they are large and nobody dare stop them, and partly—though this feature is not invariably connected with size—because they are in the habit of setting customs rather than of following them. In a Birmingham firm, for instance, the workers get one week's holiday every quarter as long as they hit mutually agreed output targets. And an engineering firm employing just over 2,000 men has taken to issuing a week's work to each man or gang of men on the understanding that they can go home when their week's task is accomplished.[1] In due course, and without any relaxation in rate or quality of work, the workers secured a five-day week, and many now finish on Friday midday (4). Again, rather than become a party to the uniform application of a system of payment by results in the motor-car industry, two large firms walked out of their Federation in 1947.

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[1] This procedure, but on a shift basis, was used in many collieries until the five-day week agreement of May 1947 attempted severely to limit it.

But, as the activities of small firms confirm, success does not depend primarily on adjustments of wages and hours. And if firms find it possible to offer welfare facilities of widely varying scope and type, there seems little reason why they should hesitate to improve their methods in other and more important directions. There is no embargo, for instance, on furnishing all employees with details regarding the scope of and procedure for promotion, on properly training supervisors and adjusting the organisation to enable them to do their job efficiently, on continuous, informal consultation, on helping employees to find other work when, through no fault of their own, they have to be laid off; in short, there is no embargo on efficient management.

If the great number of firms is not following up the effectiveness of the incentives which they operate in their workshops, or if they continue to apply incentives which they know to be not fully effective, it must therefore be due to reasons other than that they must conform to some uniform standards. Many are, no doubt, unduly hesitant about striking their own line and exaggerate the risk of offending fellow employers or trade unions. They wrongly attribute deficiencies to causes over which they have no control. Many of them, too, have the worst of both worlds. They are so large that they have lost the advantages of the empirical approach open to the small firm, but too small in reality or in imagination to acquire the systematic approach of larger units. They are confronted with most of the problems of the latter: to the worker an organisation employing about a thousand workers is quite likely to seem as large and inhuman as one employing ten times that number. But the smaller firms have generally not the resources, in terms of managerial ability, time or funds, to deal with the problems in an equally thorough manner.

But there are two reasons of overriding importance for their deficiencies. The first is ignorance not only of the studies that have been carried out over years past and might indicate lines of improvement, but also of the state of affairs in their own workshops. Many firms do not even know the extent of voluntary absenteeism among their workers, and most make no attempt to discover its causes.[1] Adequate output records are even scantier and the causes of variations in production unknown. Ignorance is particularly prone to reign in family businesses that have grown, sometimes rapidly, to considerable size. Often they have failed to make the organisational adjustments demanded by their new circumstances. "Managers who would shudder at the thought of not keeping detailed records of their productive and financial transactions are acquiescent to vague impressions where personnel problems are concerned" (9). They will not recognise that "the human beings in industry, the terms on which they come together and the conditions under which they work, should be considered as a subject for study and research to the same degree as the design and maintenance of machinery is made a subject for investigation by the engineer" (10). Ignorant of even the most simple data, they have at once little immediate cause and little chance to find out what really moves the workers to work.

Though shortcomings of research so far carried out is probably a contributory factor, it is in the main an effect as well as a cause of ignorance that management should pay no attention to the studies carried out over the last thirty years. In a lecture given at the first Conference on Industrial Health in 1943, Sir Edward Mellanby, Secretary of the Medical Research Council, under whose auspices the work of the

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[1] A fair number of firms keep crude statistics of absenteeism, but very few distinguish properly between lost time through latecoming and hours off or between half-days or whole days taken, or between absenteeism during the normal working week and during overtime (5). Few keep careful individual records. Though particular care was taken to seek out this information, in the course of a wartime study, no firm had the following information: 1: How much absenteeism was due to the same people being absentees over and over again, and what were the characteristics of those who were never absent? 2: Correlation between absenteeism and married (with or without children) workers. 3: Correlation between degree of skill, age, wage-rate and absenteeism. 4: Correlation between absenteeism and the work journey. 5: Absenteeism in relation to length of service with the firm (6). Even when they are compiled for a single employer, records are often not on a comparable basis (7). Nor do most firms take any steps to find out what has happened to an absentee, one case being known where a worker who was still on the books of a firm was in fact dead (8).

Industrial Health Research Board is carried on, referred to the Board as "that small band of workers who are practically unknown either to the medical world or to the public". It had then been in existence for a quarter-century and issued more than eighty-five reports.

In 1926 it had reported that many employers were probably unaware of the existence of such means as rest pauses for increasing the contentment of the worker with probably some gain in output (11): in 1942 a Parliamentary Committee had found that "it is obvious that many firms need advice on this subject" (12). Many of the problems connected with female employment in Royal Ordnance Factories had been "exhaustively dealt with" in a report on a Scottish filling factory issued towards the end of the 1914–18 war (13); yet there were no obvious signs that, when the factories required in the late war were brought into production, those responsible had assimilated and profited by the results of earlier experience (14). To allay the surprise of a Parliamentary Committee at its failure to make allowance for time-and-motion study in planning new ordnance factories, the Ministry of Supply had just thought "it fair to state that these factories were planned under great pressure in the early months of the war when there was little or no experience of modern practice in this particular field" (15). The current yet classic example was that of working hours. There had been little reason to think that the conclusions regarding hours of work reached by the Health of Munition Workers' Committee in 1917 did not apply to industry in 1940. By then a number of firms, though still "only a small minority", had persistently worked excessive hours already for many months past, and in some cases for at least two years (16). Early that year, in order to forestall further mistakes on this score, the Industrial Health Research Board had issued an Emergency Report in which available data had been recapitulated and summarised. The conclusions had been quite plain: overlong hours meant a loss in output, except possibly for a few weeks (17). The warning had not been heeded. After Dunkirk the first thought of most managers had been more staff, overtime and Sunday work, just as it had been during the First World War (18). And in his report for 1940 H.M. Chief Inspector of Factories had had to report that the lessons of the first war had been "widely" forgotten and that those managements who had not forgotten them had "felt constrained" to disregard earlier experience owing to insistent demands for greater output (19). For instance, Government departments had in general not been satisfied with the performance of any firm where working hours had not been unreasonably long and Royal Ordnance Factories had been among the last to retract their error (20). Sir Edward had therefore to devote part of his talk to a reiteration of the scope and functions of the Board.

As has been confirmed in various reports after the war, most firms are unaware even of investigations which have been carried out for their special benefit. The boot and shoe industry, for instance, has neglected a report, issued thirty years ago, on its special problem of lung diseases (21); there is equal unawareness in the jewellery trade of the published work on its specific problems of fatigue (22). In 1927 the Board issued a report on the wearing of glasses in the hosiery industry. Twenty years later the Working Party on the Hosiery Industry had to report that "most firms in the industry seem quite unaware of its [the report's] existence, nor do they altogether realise the possibility that work on linking may do serious harm to the eyesight of the operatives" (23). So great is the ignorance that the working party itself remained largely unaware that recent developments had completely invalidated the basis of the report it was now commending to the attention of the industry; and that despite a visit, in connection with new methods of training, to the very department where these developments were already bearing fruit and which they mention elsewhere in the report.

Closely allied to this ignorance is the second reason for management's deficiencies: for many reasons British industry finds it very difficult to break away from existing practices. Almost invariably change is bound to meet resistance. But according to the Platt Report on the cotton industry, "the continuance of long-established methods and practices in Britain is notorious" (24); this statement was echoed by all post-war working parties, and applies also to industries such as building and shipbuilding which were not then specially examined. Many managers are not at all conditioned to change; they tend to have supervisory staffs to match. But probably the main centre of resistance, as the ultimate responsibility, is in the board room; even as regards welfare and safety provision, the factory inspectors are convinced that until the right attitude exists there, little improvement can be effected in the works (25). Many firms refuse official and free advice on various aspects of labour management on the grounds that "we have done very well in the past, thank you".

It is a particular aspect of this resistance to change that, especially, firms with a nineteenth-century tradition of fair dealing with their workers resent the implication that they have been "either amiss or perhaps stupid" in not having made adjustments to changes in the last half-century (26). Sometimes these firms still occupy leading positions in their branches of industry and are expected to take the lead in experiment with new methods and their application. Recent changes in the hosiery industry, for instance, have depended largely on the pioneering efforts of one firm; "had effective action not been taken by this particular firm, the probability is high that an alternative basis of initiative would not have emerged in the industry for some considerable time" (27). Changes elsewhere are similarly dependent on the initiative displayed by one or two units that carry weight in the industry's counsels. But managers are afraid of experiments not only on their own but even on the basis of methods derived after experiments have already proven useful elsewhere. The Industrial Health Research Board, for one, ascribe the readiness of some firms and the reluctance of others to give effect to the new methods indicated by its studies less to any suspicion of their practical value than to the difficulties, "some of them peculiar to this country", attendant upon any alterations in existing practice (28).

The resultant totally inadequate adjustment is glaringly evident almost everywhere in industry. But it is misleading to suggest that a "big, united effort" can remove it. This is not to suggest that the scope for co-operation between industry and specialised outside agencies and between different firms is not real; it should be filled to a much greater extent than it has been in the past. For instance, until the Government decided, late in 1947, financially to support research into the human problems in industry, research organisations were invariably seriously hampered by funds. British industry is not renowned for its allocations of resources for research of any kind; but expenditure on research into human problems has come far and away last on the list. Again, only a small number of firms have co-operated in providing facilities for field research; and a number of these have confined themselves to barely tolerating research to be carried out on their premises. Researchers have been in danger of overstaying their welcome or, better, of overtaxing the patience of their hosts whenever they have asked for closer co-operation. Thus while facilities for following up the conclusions of research studies have "with few exceptions" been readily granted, the Industrial Health Research Board could only describe as disappointing the response from industry to its early proposal to establish joint Board-industry committees to test the validity of recommendations and establish their practical implications (29). One reason for the inadequacies of the research studies themselves to date has been the lack of contact between research workers and the people responsible for doing the jobs under investigation; only in part has this gap been of the researcher's making. That research into the human factor has tended to be regarded as plainly odd even where it has been allowed has ensured that at any rate some of it *would* be rather odd; it has also enhanced the resistance to research, already, on all accounts, quite sufficiently great.

There has also been far too little exchange of established ideas and practices between firms. The competitive traditions of British industry are against it. Also it involves apparently unrewarded trouble for the firm that tries to teach. During the war both types of objections counted for less than at other times, and, even though the pressure of work on management was greater, some interesting interchange of ideas took place. The compulsory introduction of joint consultative machinery, for instance, provided subject as well as occasion, and some telling pressure towards co-operation from the organised workers. Different kinds of inter-firm meetings were held, some designed primarily for educational purposes, to bring the experience of one firm to the attention of another; others designed to ascertain the problems of a region; and still others to co-ordinate the activities of joint production committees in firms working on the same project. In some cases these meetings were begun as meetings of the workers' side only. Some firms, where both the management and the workers' sides of joint production committees were fully convinced of the value of their own committee discussions, invited members of joint production committees of other firms to meet with their committees. In some cases joint meetings of works production committees of two or more firms were held on the basis of geographical location—that is, two neighbouring firms, whether or not they were working on the same product, found it useful to meet together. In other cases joint meetings were held of the committees of parent firms and firms making components for their products; and in still other cases groups of firms working on related products sponsored meetings of their joint production committees (30).

At other times exchange of information has tended to be confined to the fringe of the fringes of the subject of incentives, namely, to what firms have considered it wise and regarded it as useful publicity to let the public know about their welfare schemes and training methods. Much of it has taken place under the ægis of one or other of the institutes that deal with labour problems in industry, such as the Management Research Groups, the National Institute of Industrial Psychology, the Institute of Industrial Administration, the Industrial Welfare Society, and the Institute of Personnel Management; formally through set talks, lectures and discussion groups, written contributions to their periodicals and tours of the works of member firms; informally, and often to greater purpose, through the provision of occasions where people could meet and discuss problems and pointers to solutions. The "well-intentioned managements" who do not know what has been done in other industries and factories and who, as Ministers never tire of pointing out, would be very grateful to be given particulars (31) might well consider joining one of these organisations or, perhaps better, the British Institute of Management, which has been set up with the express purpose of co-ordinating as well as of expanding current efforts in this field.

Though the membership of almost all institutes expanded rapidly during the war and has not fallen greatly since, it probably still does not cover more than 3,000 firms. The figure underestimates their importance in terms of employment and influence on British industry and does not allow for the possibility that some professional papers may circulate in more than one works and be consulted in libraries. What is certain is that the number of firms so far taking any notice of the activities of interested bodies is very small; that the number prepared to disclose their methods of dealing with their incentives problems is smaller still; that of those the number who are prepared, assuming they are able, to go into sufficient detail is very small indeed; and that even when the contribution itself is of a high order it can be only of limited use to the individual firm with its particular pattern of problems. As it is, quite apart from informing other firms of their experiences, some firms are unable even to keep their own departments informed of developments taking place inside the firm. Wide physical separation of departments is conducive to segregation and to the atomisation of the personnel function (32); and experimental changes, even when introduced with the help of outside agencies, indicating permanently favourable results and have thus tended to be applied only in the particular workshop in which they originated (33).

There is room, therefore, for much more consultation; generally it would be of greatest value if it covered specific problems and if it took place between firms and the various official services made available to industry, e.g. by the Ministry of Labour and by the Board of Trade, and, on a fee-paying basis, by industrial consultants. With experience in other firms, consultants are often in a particularly good position to spread knowledge, and on perceiving differences in the work situations between one firm and another, to advise on appropriate adjustments. And as outsiders they are often able to induce changes in organisation and methods and personnel which, even when already perceived by the clients as solutions to acknowledged problems, often require an outside opinion to overcome the obstacles to adjustment.

But while the scope for co-operation is thus very real, it is nevertheless limited. The client–consultant relationship makes this abundantly clear: a patient does not go to a doctor unless, firstly, he feels in need of him, and unless, secondly, he values health. These conditions do not exist in the greater part of British industry. Many who regard as commonplace the possibility of substantially increasing productivity through technical improvements look askance, or worse, at the possibility of substantially increasing output through the better application of incentives. In the middle of the war an observer remarked that at none of the meetings of industrialists and businessmen which he had attended in connection with the issue of a report on the human factor did he hear even as much as a mention of the workers' attitudes, points of view and prejudices, and no suggestion that the problem concerned anything more than "the rearrangement of machinery, coupled perhaps with more scope for the industrialist and better representation of his point of view" (34). With re-equipment after the war at a slow pace, management conclude that "materially increased production a head over the next few years cannot be looked for" (35). Without detailed first-hand experience of the problems, without having at least once worked through them, management are insufficiently aware of what can be done, and have no means of identifying the problems to which scientific knowledge and research can contribute (36). Again, only the patient can decide whether he wishes to accept and implement the doctor's advice. All the various types of joint effort can help, not only in making management see the problems, but also in inducing them to try suggested solutions. Types of problems and types of adjustments can be indicated, and management can be informed of the likely value to them of implementing advice tendered to them.

But that is all. The scope for joint effort is even more limited than that of taking the horse to water. Joint guidance ceases where there cease to be joint problems. The rest of the way each firm must go on its own; and then, only it can make the requisite adjustments to continuously changing conditions. Finding and applying the best incentives in their factory and workshops is, and will therefore remain, the responsibility of each individual management.

REFERENCES

I. THE NEMESIS OF 'INCENTIVES'

1. Industrial Health Research Board (I.H.R.B.)—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 56; cf. also —82: *The Machine and the Worker*, 1938.

2. Elton Mayo, *Human Problems of an Industrial Civilisation*, 1945, p. 111; cf. also re cotton industry, Paper read to Royal Statistical Society, March 1947.

3. *The Economist:* "Recent Developments in P.M.H.," 17th May, 1947, p. 765; cf. also writings by Morris Viteles, Whiting Williams, S. B. Mathewson, Roethlisberger and Dickson.

4. Society of Automotive Engineers, Annual Meeting, 1946.

5. Adam Smith, *The Wealth of Nations*, Book V, Part III, Article III.

6. Cf. e.g., G. S. Walpole, *Management and Men*, 1945.

7. L. Urwich, *The Meaning of Rationalisation*, 1929.

8. C. H. Northcott, *Personnel Management*, 1945, p. 202.

9. Prof. Sargeant Florence, evidence to Royal Commission on Equal Pay, 1946, § 2, footnote.

10. W. C. Puckey, address to Royal Society of Arts, Jan. 1947; I.H.R.B.: *Hours of Work, Lost Time, and Labour Wastage*, 1942, p. 2; Ministry of Labour P.L.106/1942; Select Committee on National Expenditure, 1941–2, p. 15, § 8.

11. Elton Mayo, *Social Problems of an Industrial Civilisation*, 1945, p. 110.

II. CYCLES OF SLOW CHANGE

1. Translation based on that of C. Kegan Paul, London, 1873.

2. Sir W. J. Ashley, *English Economic History and Theory*, 10th edition, 1920, Part I, vol. i, p. 96; Tilers of Lincoln—"No tyler nor 'poyntour' shall stay in the city unless he enters the gild"; Tailors of Exeter—"whoever is employed for 15 days becomes a free sewer and master must pay 20*d*." (both in Sir T. Smith, *English Gilds*). Employment was generally limited, e.g. Tailors of Exeter, Founders and Fishmongers of London and Weavers of Hull in Sir T. Smith—*op. cit.*; Riley, *Liber Albus*, vol. i, p. 383; W. M. Williams, *Annals of the Founders Company*, p. 11. In some trades there was an additional limitation on the number of tools that a master might own.

3. L. Brentano, *History and Development of Gilds and Origin of Trade Unions*, 1870: of a real working class "with separate interests and ideas, there was . . . at that time no question at all", p. cxxxvi; also Sir W. J. Ashley, *op. cit.*, p. 93–4.

4. Sir W. J. Ashley, *op. cit.*, p. 101; also Lipson, *The Middle Ages*, p. 288. The master was responsible for the "good demeaning and bearing" of those he employed (Weavers of Bury, 1477); and especially for his apprentice "as he would for his son if he were of age" ("that is to say, if he can

count twelve pence, as is the law of citizens and burgesses") (Gilbert, *Documents of Ireland*, p. 242; *Borough Customs*, p. 222).

5. In London it was generally seven years (Brentano, *op. cit.*, p. cxxix), except, for instance, in the case of the Lorrimers, who specified ten, and the Grocers, who specified nine (J. A. Rees, *The Worshipful Company of Grocers*, 1923, p. 76); ten years was also the period specified by the Merchant Adventurers of Newcastle; the Fullers of Northampton were satisfied with four, and the Weavers of the same city with six (Lipson, *op. cit.*).

6. E.g. the Goldsmiths of Chester required three. A temporary disqualification from leaving was indebtedness to the master: e.g. Hatters of London, 1347: "No one shall receive the serving man of another to work, so long as he is in debt to his master" (Sir T. Smith, *op. cit.*).

7. Blacksmiths of London (1434) for three years, and Shearmen for four (London and Middlesex Archaeological Society, vol. iv, pp. 33 and 41).

8. Brentano, *op. cit.*, p. cxxix. Nobody was allowed to absent himself from such occasions without due excuse, and gild statutes almost invariably ordered fines if the person responsible had failed to summon any member. Thus the gild of the Holy Trinity, Lynn: "Ande also it is ordaynede, yet if eny brother or sister be absent at eny gaderyng or beryinge, or when he be somound, he shal payen a pounde of waxe to ye light, bot he excused resonablely" (Sir T. Smith, *op. cit.*).

9. A Norwich indenture (1405) laid down that if the apprentice married without his master's license his apprenticeship was doubled (Sir T. Smith, *op. cit.*).

10. Sir T. Smith, *De Republica Anglorum*, ed. 1906, p. 137. For other references to bodily punishment also with regard to servants, see Ipswich Indenture (1448) (Hist. MSS. Comm., 9th Rep., Part I, App. 259) and Worcester Indenture (1467). A master of the Gild of Bakers of Exeter (1483) chastised his servant "in brusying his arms and broke his hedd" (Sir T. Smith, *English Gilds*); also J. A. Rees, *op. cit.*, p. 99–100.

11. Sir T. Smith, *English Gilds*.

12. Gild of Whittawers, in Riley, *Memorials*, p. 232; also Fullers of Bristol (Sir T. Smith, *op. cit.*).

13. Tailors of Lincoln: "If any master of the craft keeps any lad or sewer of another master for one day after he has well known that the lad wrongly left his master, and that they had not parted in a friendly and reasonable manner, he shall pay a stone of wax" (Sir T. Smith, *op. cit.*).

14. Lipson, *op. cit.*: "It embodied . . . a whole social system, into which the individual was completely absorbed by the force of public opinion and the pressure of social and moral convention" (p. 296).

15. E.g. unemployment, education, poverty, sickness, old age. The qualification for such support was that the victim "has behaved himself well and loyally towards his masters" (Braelers, in Riley, *Memorials*, p. 277; see also p. 232). In times of unemployment gild members enjoyed precedence over non-members for what work there was. Finding work for members was an acknowledged function. In the case of novices and strangers this was always required; see, e.g., Gild of SS. Fabian and Sebastian, Aldersgate (in Sir T. Smith, *op. cit.*). Established workmen out of work were required to assemble at certain times at certain places "with their tools in their hands", e.g. London Flemish Weavers in churchyard of St. Lawrence Pountney and Brabant Weavers in churchyard of

St. Mary Somerset (Riley, *op. cit.*, p. 346), and Coventry Carpenters, Masons, Tilers, Daubers, and all kinds of labourers at the Broad Gate at 5 a.m. in summer (*Coventry Leet Book*, vol. iii, p. 807).

16. E.g. Gild of St. Catherine, Norwich, and tilers of Lincoln (in Sir T. Smith, *op. cit.*).

17. W. Cotton, *An Elizabethan Gild of the City of Exeter*, 1873, p. 157, quotes a case where apprentice was consequently set free from his master's employment; also Cappers of Coventry (Sir T. Smith, *op. cit.*), and London Grocers (J. A. Rees, *op. cit.*, p. 77).

18. R. H. Tawney, *Religion and the Rise of Capitalism*, pp. 22–3. Lipson declares that "the underlying principle of the gild system was order rather than progress, stability rather than expansion" (*op. cit.*, p. 287). Wyclif: ". . . divers parts of the Church have proper works to serve God; and if one part leave his work that God has limited him and take work of another part, sinful wonder is in the Church . . ." (*Works*, ed. T. Arnold, vol. iii, p. 143). Henry of Langenstein: "He who has enough to satisfy his wants, and nevertheless ceaselessly labours to acquire riches, either in order to obtain a higher social position, or that subsequently he may have enough to live without labour, or that his sons may become men of wealth and importance—all such are incited by a damnable avarice, sensuality, or pride" (*Tractatus bipartitus de contractibus emptionis et venditionis*, vol. i, p. 12, quoted Tawney, *op. cit.*, p. 35). Profits were regarded as a particular form of wages, and any bargain in which one party obviously gained more than another was regarded by medieval theologians, e.g. St. Raymond, as usury. Tawney sums up: "Craftsmen . . . must receive what will maintain them in their calling, and no more" (*op. cit.*, p. 23).

19. Cappers of Coventry (*Coventry Leet Book*, vol. iii, p. 673), London Pouchmakers, and Merchant Tailors of Bristol (Fox, *Merchant Taylors of Bristol*, p. 47). Strangers were similarly tested before they were set to work; e.g. London Founders (Riley, *op. cit.*, p. 514) and Coopers (Firth, *Coopers' Company*, p. 14).

20. Fullers of Bristol (Sir T. Smith, *op. cit.*). Journeymen's gilds were sometimes suppressed because of their alleged attempts to raise wages.

21. *Little Red Book of Bristol*, vol. ii, p. 3.

22. Lipson, *op. cit.*, p. 424; Sir W. J. Ashley, *op. cit.*, Part I, vol. i, p. 158; H. Levy, *Monopolies, Cartels, and Trusts in British Industry*, Chapter I.

23. Later, however (1575–1600), in one of the oldest 'factories' owned by the Mineral and Battery Works in Monmouthshire, "the workers were assured of continuity of employment, and in times of sickness and old age received maintenance"; also when unemployed (H. Hamilton, *The English Brass and Copper Industries*, 1926, p. 307).

24. Memo. R.L.T.R., 25–6 Edward I, m. 51, quoted in L. F. Salzman, *English Industries of the Middle Ages*, 1923, p. 51.

25. G. R. Lewis, "Tin Mining", in *Vict. County History, Cornwall*, vol. i, p. 559, quoted Lipson, *op. cit.*, p. 412.

26. Brentano, *op. cit.*

27. In the masonry trade apprentices had to be of legitimate birth and swear that, when they became masters, they would only take "free-born" apprentices (*Constitutions of Masonry*—edit. Halliwell); the Cutlers, Founders, Shearmen, Pewterers, Coopers, Carpenters and Barbers of London insisted that apprentices should be "whole of limb".

28. During the times of the Tudors it was sometimes £10, and under James I £20, £40, £60, and "sometimes £100" (Stow, *Survey of London*, 1720, p. 329). In earlier times the entrance fee had been a matter of "two pence to the wax" (Fullers of Lincoln) or a silverspoon (Tailors of Exeter, both in Sir T. Smith, *English Gilds*, 1870).

29. Brentano, *op. cit.* Developments on the Continent were very similar (see Berlepsch, *Chronik der Gewerbe*, vol. iv, pp. 32, 34 and Ouin-La-croix, *Histoire des anciennes corporations d'arts et métiers, etc., de la capitale de Normandie*, 1850, p. 749).

30. Brentano, *op. cit.* Even between the masters there appeared distinctions based on wealth; the richer craftsmen withdrew from their poorer brethren and formed their own gilds, e.g. shoemakers withdrew from cobblers and tanners from shoemakers.

31. In York (1519) and in Coventry (1524) all restrictions on the employment of apprentices were removed. The same effect was attained by the Fishmongers of London, who restricted each master only to the numbers he could afford to keep (Riley, *Liber Albus*, vol. i, p. 383).

32. In Chester the wrights and slaters were paid "such wages they be not able to live on". The town authorities consequently intervened and fixed wages (Prof. G. Unwin, *Industrial Organisation of the 16th and 17th Centuries*, 1904). In 1496 the cappers of Coventry worked a 12-hour day, which was lengthened, in 1520, 13 hours in winter and 14 hours in summer. The journeymen objected, but in 1526 the masters were allowed to reduce the wages of their workmen "according to the time of their absence" (*Coventry Leet Book*, vols. ii, p. 574; iii, pp. 673, 693). The London Shearmen complained in 1350 that the men were not willing any longer to work except on piece-rates "and then do so greatly hurry over the same that they do great damage to the folks to whom such cloths belong; by reason whereof the masters in the said trade have great blame and abuse, and take less than they were wont to do" (Lipson, *op. cit.*). The Bower's craft at York fixed wages by the piece and by the week. Payment by result became more common in the fifteenth century, e.g. sawyers were paid by 100 feet, tilers and slaters by 1,000, splitting laths by 100, walling by yard, casting and rolling lead by hundredweight, making plate by ounce, doing ceiling work by the yard (J. E. T. Rogers, *Work and Wages*, 1884, vol. ii, 328). But the assessment was on the basis of a fair day's work and it is not at all certain that piece-work was not just a device to make workers earn a certain day's pay and that the rate would have been adjusted if it had been found that it yielded more.

33. Already in 1467 the Worcester authorities, and later also other authorities, e.g. Coventry (1518), had to take steps on behalf of the workers (Lipson, *op. cit.*, p. 424).

34. There were a great number of Statutes, e.g. 12 Richard II, 14 Edward II, 15 Henry VI. A series of Acts under Henry VII, Henry VIII, Edward VI and Mary Tudor, sought to control the gilds by requiring submission of ordinances to the Lord Chancellor, Lord Treasurer and Lords Justices (1503); by fixing fees (1530); by forbidding masters to take oaths from apprentices on matters other than the statutes; or for taking fees for the grant of freedom of the gild; or to "constitute and appoint how much work they shall do in a day, and what hours and times they shall work, (and) . . . make nor do their works but at a certain rate

(1549); or forbidding clothiers living outside towns to keep more than two looms or two apprentices (1554).

35. 5 Elizabeth, c. 4, 1562. E.g. limitation of employment, fixing of wages and hours, settlement of disputes between parties, guaranteed employment for journeymen.

36. For a description of their diligent efforts see E. M. Leonard, *The Early History of English Poor Relief*, 1900, pp. 148–64, and Prof. G. Unwin, *Industrial Organisation of the 16th and 17th Centuries*, 1904, pp. 142–7. In 1629, 1631 and 1637 the Council took steps to have the wages of the East Anglian textile workers raised, and punish with imprisonment in the Fleet an employer notorious for paying in truck.

37. In company with Elizabethan law relating to employment; see Sir Matthew Hale, *A Discourse touching Provision for the Poor*, 1683.

38. In the woollen industry wage-fixing had ceased to be regular by the turn of the eighteenth century; in 1720 the Justices fixed wages but did not enforce them (Royal Commission on Woollen Manufactures, 1806).

39. In frame-work knitting, where the Statute was supposed to apply indirectly, apprentices were employed "in unlimited numbers". One master had, by the beginning of the eighteenth century, employed 25 apprentices to 1 journeyman for the past thirty years; another, in Nottingham, worked with 23; and another with 48 without any journeymen at all. The Company of Framework Knitters refused to enforce the Statute on its members (1720) (Felkin, *History of Machine-wrought Hosiery and Lace Manufactures*, 1867, p. 75).

40. Stow, writing in 1720, complains that "now . . . (fees) are vastly enhanced to £500, £600, or £800" (*Survey of London*, 1720, p. 329).

41. A series of petitions from masters at the turn of the nineteenth century urged that large numbers of workmen would become idle if the regulations were enforced; for many masters were not entitled to be masters under the Statute (Royal Commission on the Woollen Industry, 1806).

42. E.g. the strike of woollen workers in 1756 as answer to the refusal of the Justices of the Peace to fix wages (Royal Commission, 1806); petitions by framework knitters in 1770's (*Journal of House of Commons*, vols. xxxvi, pp. 635, 728, 740–2, and xxxvii, pp. 117, 295, 301, 370–2) and of ribbon weavers after 1814, considered by House of Commons Committee in March 1818, and of woollen workers, joined by some working masters, at end of eighteenth century, costing £10,000–£12,000 (Royal Commission, 1806); a Bill on the basis of findings of a Parliamentary Committee investigating framework knitters was thrown out after third reading (Felkin, *op. cit.*, pp. 117, 227–9); Act of 1726 ordering Justices to fix wages in woollen trade (Royal Commission) and Spitalfields Acts of 1773, 1792, 1811 to reimpose wage-fixing in silk manufacture.

43. The list of rules of the Gild of Joiners and Carpenters of Worcester, issued in 1792, indicates that attempts were still being made to apply incentives along gild lines in some trades and some places. Apprentices, in this list, were limited in number (Regulation 10) and were still living with the master. Regulation 11 lays down how an apprentice is to be dealt with for absenting himself from service, and the master is fined 40*s*. if he takes him back again without showing him to the Master, Wardens and Assistants. This trade also left open opportunities for advancement.

44. 2 Henry VII, c. 22.

45. *The Newcastle Merchant Adventurers*, 1554, vol. i, p. 6.

46. *Op. cit.*, 1574, vol. i, p. 7.

47. "The novelty consisted in the religious zeal which was thrown into . . . application" (Tawney, *Religion and the Rise of Capitalism*, p. 119).

48. See, e.g., R. Fawcett, *The Religious Weaver*, 1773, p. 87: "The union of religious life with business needs was a leading thought with the Puritans, and was transmitted by them to other dissenters . . ." (H. Levy, *Economic Liberalism*, 1913, p. 58).

49. Baxter, *Christian Directory*, vol. i, p. 378b.

50. Baxter, "The poor man's family book," *Works*, vol. xix, p. 498; also "How to do good to many", *Works*, vol. xvii, p. 301.

51. E.g. Matthew Henry, *The Worth of the Soul*: "Those that are prodigal of their time despise their own souls"; Baxter, *Christian Directory*, ed. 1678, vol. i, p. 111a: "To neglect bodily employment and mental labour and say 'I will pray and meditate', is as if your servant should refuse your greatest work, and tye himself to some lesser easie part . . . God hath commanded you some way or other to labour for your daily bread"; Defoe, *The Complete English Tradesman*, p. 50: "Time is no more to be unemploy'd than it is to be ill employ'd". Wesley specified that religious services should be so placed that they did not conflict with work, i.e. at 5 a.m. and 7 p.m. (*Journal of Rev. John Wesley*, edit. Telford, vol. iii, p. 240). Similarly the Methodists: "What ought we to avoid next to luxory? Idleness; it will destroy the whole work of God on the soul" (*Minutes*, ed. 1862, p. 716, quoted E. D. Bebb, *Non-conformity and Social and Economic Life*, 1660–1800, 1935). Luther also regarded idleness as an unforgivable sin (Tawney, *op. cit.*).

52. Whitefield, "Prayers on several occasions," *Works*, vol. iv, p. 471–3.

53. E.g. common rights (Tawney, *op. cit.*, p. 260).

54. Cromwell abolished Christmas, Easter, Whitsun and "other days commonly called holidays" and introduced the strict Puritanical observance of Sunday. The apprentices "were not only deprived of the benefit of visiting their friends and kindred, but also of all set times of pleasure and lawful recreations" and petitioned Parliament (Two humble petitions of the apprentices of London and parts adjacent, for lawful recreations, etc., 1646) for the appointment by law of one day per month for these purposes. Thereupon Parliament appointed the second Tuesday of every month (Ordinances of the Commonwealth, 1647). When the masters were reported to be curtailing their apprentices in the enjoyment of their "play-days" (Humble remonstrance of the Apprentices of the City of London, 1647), Parliament ordered that on these days all shops should remain closed (Ordinances, 1647—Daies of recreation, etc.).

55. "The Poor addict themselves to idleness and pilfering because they know that if they come to want the Parish is bound to keep them" (Davenant, *The Trade of England Revised*, 1681). The Justices of the Peace regarded poverty as a punishment for sin and were very harsh to the poor. On several occasions the House of Commons issued orders (e.g. 1649) and had committees to discuss this new attitude.

Not all Puritans were so harsh. William Goffe argued that the poor ought to be encouraged and mercifully dealt with and kindly used until their slow hands be brought to working; also that they should get the highest price for their labour that the commodity could bear, and that the expenses of training should be borne by the Parish (*Dictionary of National Biography*).

"Do not imagine that all the poor people in England are like unto those vagrants you find up and down the streets. No, there are many thousands whose necessities are very great and yet they do what they can by their honest labour to help themselves; and many times they would do more than they do but for want of employment" (Firmin, *Some proposals for the employing of the poor, especially in, and about, the City of London*, p. 11).

A Quaker, Thomas Lawson, advocated in 1660 a census of the poor and the "setting up of poor man's offices where those wanting work and those wanting workmen might enquire" (quoted E. D. Bebb, *op. cit.*).

56. E.g. East India Co. and Levant Co.

57. E.g. the Crowleys and the Darbys.

58. Petty, *Political Arithmetic*, p. 26.

59. Petty, *ibid.*, Preface.

60. "'tis a certain maxim that cheapness of labour, and *consequently* the cheapness of goods . . ." (*The British Merchant*, No. 5, 1719 (my italics)); also Fielding, *An Inquiry into the Causes of the Late Increase of Robbers*, 2nd edit., 1751, pp. 88 and 93.

61. T. E. Gregory, "The Economics of Employment, 1660–1713", in *Economica*, 1921, vol. i.

62. A new Act, of 1662, was consequently full of obstacles to relief.

63. Petty, *Treatise of Taxes*, Hull's edit., vol. i, p. 87; also Brewster, *The Grand Concern.*

64. Gregory, *op. cit.*; Petty, *Political Arithmetic*: "when corn is extremely plentiful . . . the labour of the poor is proportionately dear: And scarce to be had at all. (So licentious are those who labour only to eat and drink)" (Hull's edit., vol. i, p. 274); Sir Josiah Child, *Discourse of Trade*: "And for our own poor in England; it is observed that they live better in the dearest counties for provisions than in the cheapest, and better in a dear year than in a cheap, especially in relation to the public good, for in a cheap year they will not work above two days a week; their humour being such that they will not provide for a hard time, but just work so much and no more as may maintain them in that mean condition to which they have been accustomed" (edit. 5, 1751, p. 12); Tucker, *The Advantages and Disadvantages which respectively attend France and Great Britain with regard to Trade:* "The men are as bad as can be described; who become more vicious, more indigent and idle, in proportion to the advance of wages, and the cheapness of the provisions: great numbers of both sexes never working at all while they have anything to spend on their vices" (edit. 4, p. 46); Chamberlayne, *Angliae Notitia*, 1714: the poor "have nothing to stir them up to be serviceable but their wants, which it is prudence to relieve, but folly to cure", and "to make society happy it is necessary that great numbers should be wretched as well as poor"; a title of a book published in 1675 included, among other words, these: ". . . argument drawn from experience that nothing but necessity will enforce labour, and that no state ever did or ever can make any considerable figure in trade where the necessaries of life are at a low price"; "The main spur to Trade, or rather to industry or ingenuity, is the exorbitant appetite of men, which they will take pains to gratify and so be disposed to work when nothing else will incline them to it; for did men content themselves with the bare necessaries we should have a poor world" (Sir Dudley North, *Discourse upon Trade*, 1691, John Hopkins Reprints, p. 27).

65. R. H. Tawney, *op. cit.*, p. 248; also H. Levy, *Economic Liberalism*, 1913, p. 84.

66. The Act of Elizabeth prescribed a twelve-hour day and the quarter sessions' ordinances constantly called attention to the law, and reminded artisans of the penalties they incurred—a penny for every hour of absence (J. E. T. Rogers, *Work and Wages*, vol. ii, p. 542).

67. Defoe, *The True-born Englishman*, p. 15.

68. Defoe, *Giving Alms no Charity*, p. 27; cf. also Arthur Young, *Six Months' Tour through the North of England*, vol. i, pp. 171 *et seq.*; vol. iii, pp. 187 *et seq.*

69. Royal Commission on the Woollen Industry, 1806, p. 115.

70. *Journal of the House of Commons*, vol. xxxvi, pp. 635, 728, 740–2; and vol. xxxvii, pp. 117, 295, 301, 370–2.

71. Felkin, *op. cit.*, pp. 227–9.

72. Brentano, *Wages and Hours in relation to Production*, ". . . all diversions were regarded as wrong because it was believed that successful production demanded long hours, bare life, a mind without temptation to think or to remember, to look before or behind" (J. L. and B. Hammond, *Rise of Modern Industry*, p. 229, see also p. 231); cf. also J. P. Kerr, *The Moral and Physical Conditions of the Operatives employed in the Cotton Manufacture in Manchester*, 1832, p. 24.

73. J. L. and B. Hammond, *The Town Labourer.*

74. *The Factory Question considered in relation to its Effects on the Health and Morals of those employed in Factories and the Ten Hours Bill*, 1837, p. 58.

75. Quoted by J. L. and B. Hammond, *op. cit.*, 1917, pp. 19–20.

76. Industrial Remuneration Conference, 1885, Report, p. 106.

77. Royal Commission on the Woollen Industry, 1806, p. 40.

78. *An Inquiry into the Principles and the Tendency of the Bill Imposing certain Restrictions on Cotton Factories*, London, 1818. The Factory Enquiry Commission of 1833 found that "if parents are inhuman enough to overwork their children . . . the cause obviously lies in the bad moral character of the parents which Factory Bills more effectually debase . . ." (Supplementary Report, D, pp. 2, 226).

79. There were also reading-rooms and musical societies. According to the 1833 Report of one of the factory inspectors, there was a widespread desire of "many masters (to) . . . promote the welfare of their people if they knew any practical mode of doing so". Later on there were also canteens, medical services and sports grounds. They were all regarded as extras, as charities, which a profitable business might be able to afford "out of the goodness of its heart" (Samuel Courtauld at Half-Day Conference of Institute of Labour Management, 3rd Oct., 1942).

80. Minutes of Evidence of Committee to consider the several petitions relating to the ribbon weavers, 18th March, 1818, p. 43.

81. J. Neff, *The Rise of the British Coal Industry*, vol. ii, p. 169; "As late as 1880 it was argued that provision for compensation (workmen's) might make workers careless" (H. Levy and Sir A. Wilson, *Workmen's Compensation*, 1939, vol. i, pp. 12–3).

82. N. W. Senior, *Letters on the Factory Acts as it affects the Cotton Manufacture*, 1837.

83. *The factory question considered*, etc., p. 123.

84. As reported in *The Times*, 14th May, 1846.

85. The *Greville Memoirs*, 1885, Part II, vol. ii, p. 236. A letter by "A constant Reader" in the *Economist*, 24th April, 1847, declared that "there will . . . be an immediate loss to the employers or employed, or both. . . . All these losses will materially enhance the cost of goods, rendering the competition of foreign manufactures successful, to the ultimate loss of a considerable part of our foreign trade . . .".

86. *Hansard*, Debates, Series 3, vol. 89, p. 1148.

87. Final Report, p. 42.

88. J. E. T. Rogers, *op. cit.*, vol. ii, pp. 538–9; cf. also p. 496.

89. Brentano favours this explanation, cf. *Wages and Hours of Work in Relation to Production*, translated Arnold.

90. *Discourse of Trade*, 5th edit., preface; compare *op. cit.*, p. 12.

91. *A Plan for English Commerce*, edit. 1728, p. 60; compare with *The True-born Englishman*, p. 15, and *Giving Alms No Charity*, p. 27.

92. Arthur Young, *Eastern Tour*, 1771, vol. iv, p. 361, cf. also *Northern Tour*, p. 193, and *Six Months' Tour through the North of England*, vol. i, p. 17 *et seq.*; vol. iii, p. 187 *et seq.*

93. *Annals of Agriculture and Other Useful Arts*, 1785, vol. iii, p. 268–72. Burke went as far as saying that "the experience of every day tells us that when the price of labour is highest, the manufacturer is able to sell at the lowest price" (Speech on Irish Bill, 1778, *Parliamentary Debates*, vol. ix, p. 179).

94. Third Report of Mr. Arbuthnoth, Inspector of Linen Manufacture in Ireland, 1782 (quoted by Arthur Young, *Annals of Agriculture*, etc., 1785).

95. Quoted J. Anderson, *Observations on the means of exciting a Spirit of National Industry, chiefly intended to promote the agriculture, commerce, manufacture, and fisheries of Scotland*, 1777, pp. 350–1. The author states that his "own experience corroborates that of Mr. Smeaton" and observes "that labour estimated by the day is much lower in Scotland than in England; and that grain and other rude produce of the field is also cheaper".

Vanderlint, Postlethwaith and Forster also belong to the school of thought based on a belief in the efficacy of high wages.

96. *Wealth of Nations*, vol. i, Chapter viii; my italics.

97. Eric Roll, *An Early Experiment in Industrial Organisation.*

98. Cf. Urwick and Brech, *Scientific Management*, vol. ii, pp. 55–7.

99. Robert Owen, *The Formation of Character.*

100. Eric Roll, *op. cit.*,

101. T. J. Ashton, *The Iron and Steel Industries in the Industrial Revolution*, 1924, p. 193.

102. Urwick and Brech, *op. cit.*, vol. ii.

103. Speech, 22nd May, 1846.

104. J. L. Kennedy in 2nd Commission on Children's Employment, 1843.

105. Brassey and Chapman, *Work and Wages*, vol. ii, p. 235.

106. To the Commission to inquire into the working of the factory acts, 1876, Philip Mundella, one time President of the Board of Trade, told that "it is the long hours of foreign peoples which protect us from their competition" (quoted Hadfield and Gibbon, *A Shorter Working Day*,

1892, p. 127). Similarly John Scott, shipbuilder of Greenwich, who ascribed lower output of French workers not to lack of skill, etc., but to "too long hours" (Royal Commission on the Depression of Industry and Commerce, 3rd Report, p. 189). Brassey and Mather reached the same conclusion.

The same results obtained in other countries. In U.S.A.: "it is clearly proved that Massachusetts with ten hours produces as much per man, or per loom, or per spindle . . . as other States with eleven or more; and also that wages here rule as high, if not higher . . ." (The Massachusetts Board of Labour—Statistics commissioned by a Parliamentary Committee to investigate the effect of the Ten Hours Act, 1874; similarly New York). In 1900 the Zeiss Optical Works altered the scheduled hours of work from nine to eight per day and found that increased production per hour made up for loss in hours. Similarly in Engis Chemical Works, Belgium, 1905, and in Australia.

107. E.g. Scotia Engine Works, Sunderland; West Hartlepool Steel Works; Royal Ordnance Factories and Dock Yards; Port Clarence Works of Dorman Long & Co.; blast furnaces in Durham, Cleveland and West Coast; steel and tin-plate works in South Wales—all between 1890 and 1914. Cf. Report of Select Committee on National Expenditure, 1940–1 and Industrial Health Research Board, Annual Report, 1920.

108. Brassey and Chapman, *op. cit.*, vol. iii, pp. 211–2.

109. *Ibid.;* see also Brassey, Lecture on Nine Hours Movement, 1873. Brassey's law was supported by the investigation of an American manufacturer, who examined the foremost industries competing in world markets and concluded that labour costs were highest in countries where longest hours were worked and lowest wages paid (J. Schoenhof, *Economy of High Wages*, 1892). Similarly, J. G. Hofmann, William Roscher, Michael Chevalier, Professor Edwin Nasse, and others. At the Liège Mining Administration it was discovered that "the workman turned out most work when his pay was exceptionally high"; see also the German Iron Inquiry Commission (L. Brentano, *op. cit.*). Of all the peoples he knew, Brassey thought it was only to Hindus that the doctrine of high wages did not apply.

110. J. E. T. Rogers, *op. cit.*, vol. ii, p. 571, p. 506.

111. Statement relating to the Iron Trade of the United Kingdom reprinted in 2nd Report of Royal Commission on the Depression of Trade and Industry, 1886, p. 340. See also statement by Sir Joseph Crowe, the Commercial Attaché to the English Embassies in Europe.

112. Board of Trade Survey, 1906. Joint agreements covered large sections of these trades—e.g. electrical cablemaking, carpet manufacture, railways, civil service, boots and shoes, baking, electricity, gas, water, local authority (non-trading), paper-making, india-rubber, Scottish Co-operative Societies.

113. Brassey realised this. In a boom, as for instance, in the early 1870's, there were widespread increases in wages which were not balanced by increased production; the improvements were too sudden (Brassey, "Wages in 1873", Paper read to Social Science Association, 1873). Cf. also, "Price of Labour in England", *International Review*, 1876.

114. Board of Trade Survey, 1906. See also Industrial Remuneration Conference, 1885, Report, pp. 14 and 33.

115. Address at Annual Conference of Co-operative Societies, 1874.

116. Brassey, Lecture on Nine Hours Movement, 1873.

117. Cases also in U.S.A., France and Germany.

118. Hon. Sir R. D. Denman, Bart., "Sidney Buxton and the Fair Wages Clause", in *Political Quarterly*, April–June 1947, vol. xviii, No. 2.

119. E.g. 1870 and 1875 (Brentano, *op. cit.*). In 1873 employers in the Lancashire coal industry suggested a 10 per cent. cut in wages; the men struck (Brassey, *op. cit.*, 1873). In textiles there were many reductions (Brassey, *English and Foreign Labour*, 1878). Cf. also Royal Commission on Labour, 1890.

120. Brassey and Chapman, *op. cit.*

121. *Ibid.*

122. Mr. Mundella, in a speech of 20th March, 1876, said that 90 per cent. of English exports were made by the piece, including all textiles, iron and steel, and also coal, cutlery and haberdashery (quoted Brassey, "The Price of Labour in England", in *International Review*, 1876). This was probably an exaggeration; see Board of Trade Survey 1906.

123. Board of Trade Survey of Wages and Hours, 1906.

124. Industrial Remuneration Conference, 1885, Report, p. 114–6.

125. *Ibid.*, p. 117.

126. T. Brassey, Address to Annual Conference of Co-operative Societies, 1874.

127. Frederick Hill, brother of Sir Rowland Hill of Post Office fame (quoted by Brassey in Lecture on Nine Hours Movement, 11th Oct., 1873).

128. In some industries, e.g. coal-mining, the desired effect could be achieved without reducing the known rates, namely by abuses in inspection, counting or weighing (Checkweighers' Act, 1887).

129. Ministry of Labour, *Industrial Relations Handbook*, 1945, p. 177.

130. David F. Schloss, *Methods of Industrial Remuneration*, pp. 14–15 and "The Basis of Industrial Remuneration", in *Economic Journal*, 1892, p. 610.

131. Ministry of Labour, *op. cit.*

132. The Halsey system is sometimes referred to as the Weir system; the two systems are in all essentials the same. Weir = G. & J. Weir of Cathcart, Glasgow; Rowan = David Rowan and Sons, where it was introduced in 1898. A firm which early adopted Halsey's system was Taylor, Taylor and Hobson, Leicester. Different forms of premium systems were introduced at the Thames Ironworks (Good Fellowship Scheme, 1891) and at William and Robinson, Rugby. See *Industrial Relations Handbook*, p. 178 *et seq.*

133. T.U.C., Investigation into Premium Bonus in Engineering, 1910.

134. Cf. Carlisle Memorandum, 1902, which laid down a principle which was to be applied widely later: that no change in prices should take place unless the methods of manufacture were changed.

135. Cf. Royal Commission on Labour, 1891.

136. Reports of T.U.C., 1908 and 1909; cf. also Report of T.U.C. Enquiry into Scientific Management, 1910. Taylor, incidentally, uses the same terms. "Ordinary piece-work system involves a permanent

antagonism between employers and men and a certainty of punishment for each workman who reaches a high grade of efficiency. The demoralising effect of this system is most serious" ("Piece-rate System", Paper read at American Society of Mechanical Engineers, 1895).

III. THE CURRENT CENTURY

1. Brassey and Chapman, *Work and Wages*, vol. iii, p. 210.

2. *Ibid.*, p. 237.

3. *Ibid.*, p. 210.

4. In the oil-cake industry a Joint Welfare Committee covered the whole industry. In 1892 the South Metropolitan Gas Company introduced systems of inquiry by jury of workers, foremen and management. Just before 1914 accident committees were set up in iron foundries and tin-plate mills.

5. In some cases the men struck and in others the unions tried to victimise members who accepted profit-sharing.

6. Brassey, Address to Annual Conference of Co-operative Societies, 1874; Lecture on Nine Hours Movement, 1873; cf. also Robert Owen, *The Formation of Character.*

7. Brassey and Chapman, *op. cit.*

8. *Ibid.*, vol. ii, p. 216.

9. Slater Lewis, *The Commerical Organisation of Factories*, 1896.

10. *Ibid.*

11. *Ibid.*

12. Brassey, Lecture on Nine Hours Movement, 1873.

13. Cf., e.g., Industrial Health Research Board, Annual Report, 1920.

14. *Ibid.*, Annual Report, 1938, p. 1.

15. Cf. Health of Munition Workers' Committee, Memoranda, especially No. 5, 1916.

16. 1913 Institute of Labour Management; 1918 Industrial Fatigue Research Board, successor to Health of Munition Workers' Committee and since 1928 I.H.R.B.; also Industrial Welfare Society; 1919 Management Conference initiated by Rowntree also forerunner of Management Research Group founded in 1927; 1920 Institute of Industrial Administration; 1921 National Institute of Industrial Psychology.

There was a new interest in worker-management co-operation, of which the Whitley Council and the multiplication of trade boards were only the more substantial signs. Others included the National Industrial Alliance, Alliance of Employers and Employed, Higher Production Council, Industrial Christian Fellowship, and Christian Order of Industry.

17. In the first ten years of its existence the National Institute carried out 180 investigations covering practically every branch of industrial activity: coal, gold, slate-mining, iron and steel, lead, aluminium, chemicals, cement, celluloid, gas, tin-plate, cutlery, motor-cars, tramcars, omnibuses, cycles, wireless, telephone, cables, glass, rubber, hemp, flax, screws, clothing, catgut, railways, steamship, omnibus garage, oil refining, seed-crushing, cabinet-making, tin-can making, bakeries, sweets, jam, pickles, margarine,

eer, mustard, soap, perfumes, paint, laundries, cleaners, tapestry, calico rinting, cotton-doubling, printing, newspaper, clerical, insurance, bank, tore, restaurant, various public bodies (H. Welch and C. S. Myers, *en Years of Industrial Psychology*, 1932).

18. I.H.R.B.—30: *An Experimental Investigation into Repetitive Work*, 1925, . 46.

19. *Ibid.*, 69: *Incentives in Repetitive Work*, 1934, p. 31.

20. Roethlisberger and Dickson, *Management and the Worker*, p. 572.

21. H.M. Chief Inspector of Factories, Annual Report, 1944.

22. Sargeant Florence, *Economics of Fatigue and Unrest*, 1924, pp. 386–7; ny italics.

23. Dr. May Smith: *General Psychological Problems confronting an nvestigator*, 1924, p. 29.

24. Roethlisberger and Dickson, *op. cit.*, p. 574.

25. *Ibid.*, p. 557.

26. *Ibid.*, p. 576; cf. also p. 557. G. A. Pennock, *Personnel Journal*, eb. 1930, viii, p. 315.

27. Roethlisberger and Dickson, *op. cit.*, p. 574.

28. H. E. O. James and Cora Tenen, *Occupational Psychology*, Jan. 1947.

29. Cf. also P. Hall and H. M. Locke, *Incentives and Contentment*, 1938, . 53.

30. I.H.R.B.—88: *Study of Women on War Work in Four Factories*, 1945, . 40.

31. W. Raphael, *Times Trade and Engineering Supplement*, Sept. 1947.

32. H.M. Chief Inspector of Factories, Annual Report, 1943, p. 41.

33. James Forrester, *Picture Post*, 19th April, 1947.

34. B.B.C. Home Service, 10th March, 1947.

35. Sargeant Florence, *op. cit.*, p. 95.

36. Maria Rogers, *Sociometry*, Nov. 1946; cf., e.g., Harvard University usiness Research Studies, 291: Fox and Scott, *Absenteeism: Management's roblem*, 1943; and 321: Mayo and Lombard, *Teamwork and Labour Turnover n the Aircraft Industry of Southern California*, 1944.

37. Cf., e.g., For building, Norah M. Davis, *Occupational Psychology*, nd April, 1944, xviii.

38. Letter in the *Observer*, July 1947.

39. J. M. Fraser, *Occupational Psychology*, 3rd July, 1946, xx.

40. *The Times*, Employment on Merseyside, 16th April, 1947.

41. Working Party on Jewellery, 1947.

42. I.H.R.B.—Emergency Report 3, 1942.

43. Memoranda, especially No. 5, 1916.

44. Cf., e.g., H. M. Vernon, *Hours and Output*, 1943; Kurt Lewin, *uman Relations*, 1, i, p. 36.

45. Roethlisberger and Dickson, *op. cit.*, p. 597.

46. K. Lewin, *op. cit.*; cf. also I.H.R.B., Annual Report, 1937, p. 26. . Ramsey and others, *Rest Pauses and Refreshment in Industry*, 1939, p. 42.

IV. THE CARROT AND THE STICK

1. As reported in *The Times*, 20th March, 1947.

2. Industrial Health Research Board—23: *Variations in Efficiency in Cotton Weaving*, 1923; cf. also: 77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 49; B. S. Rowntree, *Contemporary Review*, Oct. 1917.

3. Roethlisberger and Dickson, *Management and Worker*, 1940, p. 576.

4. F. J. Burns-Morton, *The New Foremanship*, 1946, p. 4.

5. *Economist*, "Recent Developments in P.M.A.", 17th May, 1947, p. 765.

6. Whiting Williams, quoted in *Planning*: 233, "Output and the Worker", 20th April, 1945.

7. Sir C. Reid, *Report on the Coalmining Industry*, 1945.

8. M. Steward, *The Forty Hour Week*; T.U.C., The Forty Hour Week, 1944.

9. Evidence submitted by the T.U.C. to Committee on Double Day-Shift Working, 1947.

10. Chairman, Dorman Long & Co., Ltd., at Annual Meeting, March 1947.

11. Norah M. Davis, *Occupational Psychology*, April 1948, xx, 112, pp. 57–8; cf. also R. P. Lynton, "Factory Psychology in the Transition", *Pilot Papers*, January 1946, I, i.

12. Select Committee on National Expenditure, 1941–2, Report No. 3.

13. Memorandum submitted by Labour Department of the Cotton Board to the Working Party, 1946.

14. Working Party on Jewellery, 1946; cf. also Norah M. Davis, *op. cit.*, p. 58, re building.

15. Cf., e.g., Harold Whitehead, letter in *The Times*, 2nd March, 1946.

16. W. Raphael, *Occupational Psychology*, April 1947, xxi, 2.

17. Board of Trade, *Memorandum on Fluctuations in Employment.*

18. *United Kingdom Abstract of Labour Statistics.* Quoted Beveridge, *Full Employment in a Free Society*, 1944, p. 196.

19. Alex. Baycoff, *Development of the Soviet Economic System*, 1946, pp. 229, 351.

20. E.g. in cotton, cf. Memorandum by Labour Department of the Cotton Board to the Working Party, 1946.

21. E.g. in pottery, engineering and retail trades.

22. E.g. in clothing industries, cf. reports of working parties, and the motor industry.

23. F. J. Burns-Morton, *op. cit.*, p. 75.

24. Industrial Welfare Society, *Survey*, 1946.

25. Conservatives and Liberals, *Design for Freedom*, 1947, p. 14. Robert Watson, *Industrial Welfare and Personnel Management*, Sept.–Oct. 1946; cf. also R. S. Waddington, *Labour Management*, Oct.–Nov. 1945.

26. Cf., e.g., letter in *The Times*, 5th Nov., 1946; also 19th Oct., 1946.

27. Nov. 1946.

28. Clause 12, Sept. 1946.

29. Prof. Bowley, London and Cambridge Economic Service, Special Memo. 50, May 1947.

30. Royal Commission on the Coal Industry, Report, 1936, p. 111.

31. Prof. Bowley, *op. cit.*

32. Joint Chairman, Joint Industrial Council of Cement Industry, letter in *The Times*, 21st Feb., 1946.

33. Cf., e.g., *Report on the Iron and Steel Industries*, 1928.

34. P.E.P., *Report on the Coal Industry*, 1936, p. 176.

35. S. P. Dobbs, *The Clothing Workers of Great Britain*, p. 167. T.U.C., Bedaux, 1933.

36. Board of Inquiry into Yorkshire Wool Textile Industry, Report, 1936, § 63.

37. S. P. Dobbs, *op. cit.*, p. 167.

38. T.U.C., *op. cit.*

39. Board of Inquiry into Scottish Wool-combing Industry, 1943.

40. Cf., e.g., Shopstewards' National Council, *Arms and the Men*, 1941.

41. E.g. in the engineering industry.

42. W. McLane, *International Labour Review*, June 1944.

43. S. P. Dobbs, *op. cit.*

44. "Some Problems of Discipline among Adolescents in Factories", *Occupational Psychology*, April 1947, xxi, 2.

45. Royal Commission on Equal Pay—Report, 1946, §§ 165, 175, 187.

46. Ministry of Labour, *Industrial Relations Handbook*, 1944, p. 159.

47. G. Isaacs, Minister of Labour, Debate on Fair Wages Clause, 14th Oct., 1946.

48. Ministry of Labour, *op. cit.*, p. 147.

49. C. S. Myers, *Mind and Work*, p. 111.

50. C. S. Myers, *op. cit.*; C. H. Northcott, *Personnel Management*, 1945, p. 42; Yorkshire Wool Textile Industry, except Wool-combing, Inquiry, 1936; W. McLane, General Secretary, A.E.U., *International Labour Review*, June 1944; Shopstewards' National Council, *op. cit.* Select Committee on National Expenditure, 1941–2, 17 and 23. Statement prepared by executive of "one of London's most important engineering concerns", quoted A.E.U., *Survey of Production*, 1942.

51. Cf., e.g., C. S. Myers, *Mind and Work.*

52. I.H.R.B.—88: *Study of Women on War Work in Four Factories*, 1945.

53. Chairman, Lotus Ltd., Annual Meeting, Feb. 1947.

54. S. B. Mathewson, *Restriction of Output among Unorganised Workers*, 1931.

55. Roethlisberger and Dickson, *op. cit.*, Part IV.

56. Royal Commission on Equal Pay, 1946; evidence.

57. Cf. Bowley, *op. cit.*

58. *The Times*, 2nd Oct., 1947.

59. British Employers' Federation, evidence to Royal Commission on Equal Pay, 1946, § 24.

60. Royal Commission on Equal Pay, § 153.

61. A.E.U., 1st Report on Production, 1941.

62. Select Committee on National Expenditure, 1941–2, 11, § 30.

63. B. L. Coombes, *Fortnightly*, June 1947.

64. Norah M. Davis, *Occupational Psychology*, April 1944.

65. Letter signed Miner in *The Times*, 28th April, 1946.

66. Arthur Horner, letter in *The Times*, 1st May, 1946.

67. Sir Raymond Streat, address to Bolton branch of Textile Institute, Dec. 1946.

68. E.g. Working Party on Boots and Shoes, Report, 1947, p. 164.

69. *The Human Factor*, 1926–7.

70. F. J. Burns-Morton, *The New Foremanship*, 1946, p. 40.

71. Cotton Manufacturing Commission, Interim Report, 1948.

72. M. Agnes Smith, *A Worker's View of the Wool Textile Industry*, Hillcroft Studies 2, 1944, p. 26.

73. British Employers' Federation, *op. cit.*

74. Working Party on Heavy Clothing, Report, 1947, p. 62.

75. Court of Inquiry into wages and hours of work in the wool-combing section of the wool textile industry in Scotland, 1943.

76. *Ibid.*

77. E.g. engineering and coal-mining.

78. G. A. Lord, *Fortnightly*, May 1947.

79. W. H. Bower, *Labour Management*, Dec.–Jan. 1943–4.

80. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, pp. 52–3.

81. W. Raphael, *Times Review of Industry*, Sept. 1947.

82. Roethlisberger and Dickson, *Management and the Worker*, p. 576.

83. *The Economist*, 22nd March, 1947, p. 421.

84. *Ministry of Labour Gazette*, April 1948.

85. *Ibid.*

86. U.S. Bureau of Labour Statistics, 1946.

87. *Ministry of Labour Gazette*, April 1948.

88. T. E. B. Young, member of National Coal Board, at Press Conference, 22nd Dec., 1947.

89. Select Committee on National Expenditure, 1941–2, 11, § 29; cf. also M. L. Yates, *Wages and Conditions in British Engineering*, 1937.

90. *Ibid.*, 17, § 15.

91. *Ministry of Labour Gazette*, April 1948.

92. Cf. Board of Trade Survey, 1906.

93. M. L. Yates, *op. cit.*, p. 61.

94. *Ibid.*

95. Margot Heinemann, *Wages*, 1947.

96. Cf. also scheme in *Listener*, 20th Nov., 1947.

97. T. E. B. Young, *op. cit.*

98. Sargeant Florence, *Economics of Fatigue and Unrest*, 1923, p. 291.

99. Bowley, *op. cit.*

100. *Ibid.*

101. I.H.R.B.—Annual Report, 1924, p. 57; Select Committee on National Expenditure, 1941–2, 17, § 22; cf. also Reaveley and Winnington, *Democracy in Industry*, 1947, p. 117; Norah M. Davis, *Occupational Psychology*, April 1944, xviii, 2.

102. Cf. Kurt Lewin, *Human Relations*, 1, i, p. 25.

103. P.E.P., *Studies in Trade Unionism*, 1948.

104. *Ministry of Labour Gazette*, April 1947.

105. Letter in *The Times*, 31st March, 1947.

106. Ministry of Labour, *Rates of Wages and Hours of Work*, Aug. 1947.

107. F. G. Woollard, President, Institution of Automobile Engineers, *Sunday Times*, 9th Nov., 1947.

108. I.H.R.B.—82: *The Machine and the Worker*, 1938, p. 19.

109. Whiting Williams, *What's on the Worker's Mind?* 1920, pp. 124–5.

110. W. Raphael, *Times Review of Industry*, Sept. 1947.

111. W. D. B. Brown, "Incentives", talk on B.B.C. Home Service, 17th March, 1947.

112. Cf., e.g., Lord Woolton's speech at the Manchester Luncheon Club, 22nd Feb., 1946; a group of Conservative and Liberal M.P.s, *Design for Freedom*, 1947, p. 11; B. Gardiner, General Secretary, Amalgamated Engineering Union, *Journal of the A.E.U.*, Feb. 1946.

113. Norah M. Davis, *op. cit.*

114. Sir W. Clare Lees, Brig. Gen. Wade, H. Harris, and Sir G. Bailey, *Evening Standard*, 25th and 26th March, 1947.

115. F. A. Burchardt and G. D. N. Worswick, *Bulletin of Oxford Institute of Statistics*, 1947, ix, 3 & 4, p. 85; and D. Seers, *op. cit.*, 1947, ix, 2.

116. E.g. Victor Collins, M.P., letter in *The Times*, 15th Jan., 1947.

117. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 13.

118. Select Committee on National Expenditure, 1941–2, 11, §§ 29, 32; cf. also —19: Aerodrome Construction, § 23.

119. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 6; cf. also —30: *An Experimental Investigation into Repetitive Work*, 1925.

120. Lord Quibell, quoted V. A. Malcomson, letter in *The Times*, 17th June, 1947.

121. Hugh Lucas-Tooth, M.P., letter in *The Times*, 15th Nov., 1946.

122. Ministry of Works, *Payment by Results in the Building Industry*, Oct. 1947.

123. I.H.R.B.—63: *Inspection Processes in Industry*, 1932.

124. *Ibid.*, —69: *Incentives in Repetitive Work*, p. 6.

125. Working Party on the Heavy Clothing Industry, 1947, p. 52.

126. Court of Inquiry, 1924.

127. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 54.

128. *Ibid.*, —72: *Incentives: some Experimental Studies*, 1934, p. 56; cf. also Annual Reports, 1936, p. 32, and 1924, p. 57.

129. Hall and Locke, *Incentives and Contentment*, 1938, p. 95; cf. also Select Committee on National Expenditure, 1940–1, 17, § 72; Ministry of Labour, *The Problem of Absenteeism*, P.L.106/1942; Sargeant Florence, *Economics of Fatigue and Unrest*, 1924, p. 95.

V. FURTHER MISCONCEPTIONS

1. Heavy Clothing Working Party, 1947, pp. 51–3.

2. Mass-Observation, *Enquiry into War Production*, 1942, p. 51.

3. Select Committee on National Expenditure, 1942–3, 3, § 15.

4. Royal Commission on Equal Pay, Report, 1946, pp. 57–8. Working Parties on Heavy Clothing, 1947, p. 53; Boots and Shoes, 1947, p. 166; Hosiery, 1947, p. 148; Cutlery, 1947, p. 28. Jute Industry Factory Advisory Committee—Final Report, 1946. I.H.R.B.—88: *Study of Women on War Work in Four Factories*, 1945, p. 7. Chief Medical Statistician of General Registry Office, *Monthly Bulletin of Ministry of Health*, Jan. 1947. Select Committee on National Expenditure, 1942–3, 3, § 18. Mass-Observation, *op. cit.*, 1942, pp. 359–60. T. P. Bennett, address to Institute of Labour Management, 21st June, 1945.

5. Working Parties on Wool, 1947, p. 57; Hosiery, 1947, p. 146; Cutlery, 1947, p. 28. Physical Society, *Report on Defective Colour Vision in Industry*, 1946.

6. I.H.R.B.—22: *Some Studies in the Laundry Trade*, 1922, p. 51.

7. *Ibid.*, Annual Report, 1934, p. 24.

8. Lord Forrester, address at Conference on Industrial Health, 1944; cf. also Working Party on Hosiery, 1947, p. 146.

9. Working Party on Jewellery, 1947, p. 50.

10. Working Parties on Boots and Shoes, 1947, p. 158; and Jewellery, 1947, p. 49.

11. Ministry of Labour, *Industrial Conditions in the Cutlery Trade*, 1947, § 37.

12. Working Party on Jewellery, 1947, p. 49.

13. Mass-Observation, *op. cit.*, p. 353.

14. *Ibid.*

15. Boots and Shoes Working Party, 1947, p. 158.

16. Letter in the *Economist*, 8th Feb., 1947.

17. Select Committee on National Expenditure, 1941–2, 11, § 24; 1942–3, 13; A.E.U., *Survey of Production*, 1942.

18. Rubber-proofed Garment Working Party, 1947, p. 10.

19. *Report on Iron and Steel*, 1928, p. 41.

20. Cmd. 7225, p. 58.

21. Cf., e.g., Working Party in Light Clothing, 1947, p. 39.

22. Working Parties on Lace, 1947, pp. 115–6; Furniture, 1947, p. 93; Rubber-proofed Garment, 1947, p. 10; Boots and Shoes, 1947, p. 171.

23. Royal Commission on Coal Industry, 1925, pp. 109–10.

24. *Vauxhall Mirror*, March 1947; cf. also Sargeant Florence, *Economics of Fatigue and Unrest*, p. 95; Select Committee on National Expenditure, 1940–1, 17, § 27.

25. Hall and Locke, *Incentives and Contentment*, 1938, p. 78.

26. Mass-Observation, *op. cit.*, p. 353.

27. W. Raphael, *Times Trade and Engineering Supplement*, Oct. 1947.

28. Dr. Northcott, *Personnel Management*, 1945, p. 245.

29. Roethlisberger and Dickson, *Management and the Worker*, p. 574.

30. I.H.R.B.—26: *On the Importance and the Extent of Variety in Repetitive Work*, 1924, p. 23.

31. I.H.R.B.—52: *The Comparative Effects of Variety and Uniformity in Repetitive Work*, 1928, pp. 22–3.

32. I.H.R.B.—96: *Incentives in Repetitive Work*, 1934, p. 17.

33. P. Drucker, *Harper's*, Nov. 1946.

34. I.H.R.B., Annual Report, 1922, p. 43.

35. *Report on Iron and Steel*, 1928: evidence of Iron and Steel Trades Federation, pp. 38–9.

36. Royal Commission on Equal Pay, 1945, p. 75.

37. I.H.R.B., Annual Report, 1922, p. 43.

38. Working Party on Jewellery, 1947, p. 50.

39. B. Ungerson, *Occupational Psychology*, Jan. 1940, xiv, 1.

40. J. A. Fraser, *Journal of Textile Industries*, xiv, 12, p. 546.

41. Hall and Locke, *op. cit.*, p. 59.

42. Working Party on Boots and Shoes, 1947, pp. 161, 179.

43. Working Party on Heavy Clothing, 1947, p. 63.

44. Working Party on Wool, 1947, p. 62.

45. Select Committee on National Expenditure, 1940–1, 15, § 8.

46. Anne G. Shaw, *Occupational Psychology*, Oct. 1947, xxi.

47. Norah M. Davis, *ibid.*, April 1944, xviii.

48. Address to Week-end Conference of Industrial Welfare Society, Jan. 1946.

49. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 27.

50. I.H.R.B., *op. cit.*, p. 12; cf. also —63: *Inspection Processes in Industry*, 1932, p. 40.

51. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 31.

52. Select Committee on National Expenditure, 1942–3, 3, § 37; E. G. Greenwell, *Occupational Psychology*, Jan. 1946, xix, 1.

53. Report on Textile Industries, 1928, p. 187; Carnegie United Kingdom Trust, *Disinherited Youth*, 1936–9.

54. Select Committee on National Expenditure, 3, § 6.

55. Report of Council of Art and Industry, *Design in the Jewellery and Silversmithing and Allied Trades*, 1937.

56. Pearl King, *Human Relations*, 1, i, p. 124.

57. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 51.

58. Mass-Observation, *People in Production*, 1942, p. 141.

59. Select Committee on National Expenditure, 1941–2, 11, § 52.

60. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 27.

61. I.H.R.B.—30: *An Experimental Investigation into Repetitive Work*, 1925, p. 46.

62. I.H.R.B., *op. cit.*, p. 62.

63. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 31.

64. I.H.R.B., *op. cit.*, pp. 17, 62, 65–7; cf. also Dr. May Smith, *General Psychological Problems confronting an Investigator*, 1924.

65. I.H.R.B.—30: *An Experimental Investigation into Repetitive Work*, 1925, p. 46; cf. also p. 22 and City of Birmingham Education Committee, *Scientific Vocational Guidance and its Value to the Choice of Employment Work of a Local Education Authority*, 1945.

66. Prof. Elton Mayo, *Social Problems of an Industrial Civilisation*, 1945, p. 111.

67. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 14.

68. T. P. Bennett, address to Institute of Labour Management, 21st June, 1945.

69. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 31.

70. J. Ramsey and others, *Rest Pauses and Refreshment in Industry*, 1939.

71. Mass-Observation, *op. cit.*, p. 218.

72. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, pp. 70–2; cf. also pp. 54–4.

73. Industrial Welfare Society, Annual Report, 1945.

74. J. Ramsey and others, *op. cit.*

75. J. Ramsey and others, *op. cit.*; cf. also I.H.R.B.—42: *Rest Pauses in Industry*, 1927, p. 14; 25: *Two Studies on Rest Pauses in Industry*, 1924.

76. I.H.R.B.—67: *Manual Dexterity: Effects of Training*, 1933, p. 30; J. Ramsey and others, *op. cit.*; I.H.R.B.—42: *Rest Pauses in Industry*, 1927, p. 15; 25: *Two Studies in Rest Pauses in Industry*, 1924, p. 34; 22: *Some Studies in the Laundry Trade*, 1922, p. 19.

77. E.g. J. Ramsey and others, *op. cit.*, pp. 41–2.

78. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, pp. 53–4.

79. J. Ramsey and others, *op. cit.*

80. I.H.R.B.—42: *Rest Pauses in Industry*, 1927, p. 21.

81. *Ibid.*, p. 18; cf. also—22: *Some Studies in the Laundry Trade*, 1922, p. 19; 77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 69; J. Ramsey and others, *op. cit.*

82. T.U.C., Bedaux, 1933; J. Ramsey and others, *op. cit.*

83. I.H.R.B.—47: *Two Studies on Hours of Work*, 1928.

84. *Ibid.*

85. J. Ramsey and others, *op. cit.*

86. H.M. Chief Inspector of Factories, Annual Report, 1940, p. 3.

87. Select Committee on National Expenditure, 1942–3, 3, § 32.

88. Working Party on Boots and Shoes, 1947, p. 162.

89. E.g., Working Parties on Hosiery and Boots and Shoes.

90. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 65.

91. I.H.R.B.—56: *The Effects of Monotony in Work*, 1929.

92. R. N. Cotton, of Production Efficiency Board, M.A.P.—address to Society of Engineers, 3rd April, 1944; Ministry of Labour, *The Problem of Absenteeism*, P.L.106/1942.

93. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 65.

94. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934; 82: *Machine and the Worker*, 1938.

95. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 66.

96. *Ibid.*, p. 65.

97. G. A. Lord, *Fortnightly*, May 1947; cf. also Working Party on Boot and Shoe Industry, 1947, p. 161. *Occupational Psychology*, April 1947, xxi, 2.

98. I.H.R.B., Annual Report, 1938, p. 31.

99. *Ibid.*

VI. THE SOCIAL STRUCTURE

1. W. C. Puckey, address to Royal Society of Arts, 29th Jan., 1947.
2. *Ibid.*
3. B. S. Rowntree, *Observer*, 2nd Sept., 1945; cf. also L. Urwick, *Management of Tomorrow*, 1933, pp. 149–51.
4. Dr. Northcott, *Personnel Management*, 1945, p. 180.
5. Colliery Manager, *Coal*, 1945, p. 90.
6. W. D. B. Brown, *Occupational Psychology*, 1945, xix.
7. W. Raphael, *ibid.*, 2nd April, 1947, xxi.
8. F. J. Burns-Morton, *The New Foremanship*, 1946, p. 37.
9. Mass-Observation, *People in Production*, 1942, p. 77.
10. *Ibid.*, p. 77.
11. *Ibid.*, p. 76.
12. Letter in *Labour Management*, April–May 1944.
13. I.H.R.B.—88: *Study of Women on War Work in Four Factories*, 1945, p. 9.
14. Harold Whitehead, address to Leicester Centre of Institute of Industrial Administration, 8th April, 1944.
15. G. S. Walpole, *Management and Men*, p. 24.
16. W. D. B. Brown, Broadcast, B.B.C. Home Service, 17th March, 1947.
17. M. L. Yates, *Wages and Conditions in British Engineering*, 1937.
18. Elton Mayo, *Social Problems of an Industrial Civilisation*, 1945, p. 111.
19. Maria Rogers, *Sociometry*, Nov. 1946; cf. also Prof. Elton Mayo, *Human Problems of an Industrial Civilisation*; Roethlisberger and Dickson, *Management and the Worker*, pp. 561–2.
20. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 51; cf. also 69: *Incentives in Repetitive Work*, 1934, p. 14.
21. I.H.R.B.—88: *Study of Women on War Work in Four Factories*, 1945, p. 13.
22. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934.
23. *Ibid.*
24. I.H.R.B.—30: *An Experimental Investigation into Repetitive Work*, 1925, p. 11.
25. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934, p. 42.
26. *Ibid.*, p. 43.
27. P. Drucker, *Harper's*, Nov. 1946.
28. J. Gillespie, *Free Expression in Industry*, 1948, p. 95.
29. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, p. 50.
30. *Ibid.*
31. Admiral Sydney R. Fremantle, letter in *The Times*, 17th Sept., 1947.
32. Norah M. Davis, *Occupational Psychology*, 2nd April, 1944, xviii.; W. D. B. Brown, *ibid.*, 2nd April, 1945, xix.
33. Norah M. Davis, *ibid.*, April, 1948, xxii.

34. P. Drucker, *op. cit.*, Nov. 1946; cf. also R. Spicer, *British Engineering Wages*, 1928, p. 95.

35. M. L. Putnam, *Personnel Journal*, 1930, p. 325; cf. also p. 315. I.H.R.B.—Annual Report, 1936, p. 3.

36. Letter in *The Times*, 25th March, 1946.

37. J. M. Fraser, *Times Review of Industry*, May 1947.

38. W. H. Bower, *Labour Management*, Dec.–Jan., 1943–4.

39. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937, pp. 49–50.

40. L. Urwick, *op. cit.*, p. 147.

41. N.I.I.P., Investigation, 1924.

42. F. J. Burns-Morton, *op. cit.*, p. 130.

43. Quoted H. W. Locke, *Labour Management*, April 1941.

44. F. J. Burns-Morton, *op. cit.*

45. *Ibid.*, p. 155.

46. *Ibid.*

47. *Ibid.*, p. 136.

48. Association of Supervisory Staffs, Executives, and Technicians, National Charter, 1947.

49. F. J. Burns-Morton, *op. cit.*, p. 156. Dr. Northcott, *op. cit.*, p. 245.

50. R. Lloyd Roberts, *The Human Problems of Management*, i, Chapter 4.

51. I.H.R.B.—88: *Study of Women on War Work in Four Factories*, 1945, p. 9.

52. F. J. Burns-Morton, *op. cit.*, 1946, p. 3.

53. F. C. Hooper, Broadcast, B.B.C. Home Service, 10th March, 1947.

54. Working Party on Boots and Shoes, 1947, p. 176. Reaveley and Winnington, *Democracy and Industry*, 1947, p. 68.

55. Select Committee on National Expenditure, 1941–2, 11, § 35.

56. Dr. May Smith, *Some Psychological Problems confronting an Investigator*, 1923, p. 26.

57. F. J. Burns-Morton, *op. cit.*, 1945, p. 3.

58. Harold Whitehead, letter in *The Times*, 2nd March, 1946; Reaveley and Winnington, *op. cit.*, 1947, p. 64.

59. I.H.R.B.—77: *Fatigue and Boredom in Repetitive Work*, 1937.

60. Report of Court of Inquiry into Unrest at Smithfield Market, 1946, Cod. 6932.

61. Dr. Northcott, *op. cit.*, 1945, p. 262.

62. Working Party on Boots and Shoes, 1947, p. 161.

63. Working Party on Linoleum, Report, 1947, p. 15.

VII. JOINT CONSULTATION

1. Quoted Reaveley and Winnington, *Democracy and Industry*, 1946, p. 54.

2. I.H.R.B.—69: *Incentives in Repetitive Work*, 1934.

3. G. S. Walpole, *Management and Men*, 1944, p. 24.

4. Industrial Relations Service, *Joint Responsibility in Industry*, 1946, p. 4.

5. Allan Jarvis, *Labour Management*, Oct.–Nov. 1943.
6. B. S. Rowntree, *Observer*, 2nd Sept., 1945.
7. Select Committee on National Expenditure, 1941–2, 17, § 20.
8. "Group Neurosis in Industry", *Manchester Guardian*, 25th June, 1947.
9. G. S. Walpole, *Industrial Administration*, Oct. 1943.
10. B. S. Rowntree, *op. cit.*
11. "Group Neurosis in Industry", *Manchester Guardian*, 25th June, 1947.
12. R. S. Walpole, Address to Confederation of Management Associations, 16th May, 1943.
13. *Ibid.*
14. Industrial Relations Service, *op. cit.*, foreword and page 3.
15. Elton Mayo, *Social Problems of an Industrial Civilisation*, 1945, p. 80.
16. Industrial Welfare Society, Survey, 1942; Balfour Committee on Industrial Relations, 1926, p. 331.
17. Hosiery Working Party, 1947, p. 135.
18. P. Drucker, *Harper's*, Dec. 1946.
19. Sargeant Florence, *Economics of Fatigue and Unrest*, 1924.
20. A. Venables, *Labour Management*, Sept. 1941.
21. *Human Relations*, 1, iv.
22. Working Party on Boots and Shoes, 1947, p. 64; Royal Commission on Equal Pay, 1946, § 202.
23. C. H. Northcott, *Personnel Management*, 1945, p. 268.
24. A.E.U., Third Report on Production, 1943, p. 74.
25. I.L.O., *British Joint Production Machinery*, 1944, p. 142.
26. B. S. Rowntree, *The Human Factor in Business*, 1927, p. 33.
27. Roethlisberger and Dickson, *Management and Worker*, 1939, pp. 561–2; C. H. Northcott, *op. cit.*, 1945, p. 244.
28. G. S. Walpole, *Industrial Administration*, Oct. 1943.
29. *Ibid.*
30. Court of Inquiry into wages and hours of work in the wool-combing section of the wool textile industry in Scotland, 1943.
31. Norah M. Davis, *Occupational Psychology*, April 1944, xviii.
32. Mass-Observation, *People in Production*, 1942, p. 278.
33. Ian Mikardo, Address at Annual Conference of Industrial Welfare Society, 1947.
34. I.H.R.B., *op. cit.*, pp. 26–7.
35. Roethlisberger and Dickson, *op. cit.*, p. 575.
36. E. M. Gray, Director, Recruitment and Training Department, Cotton Board—letter in *The Times*, 1st Jan., 1946; cf. also Lord McGowan, speech at Liverpool, 31st July, 1946, as reported in *The Times*, 1st August; Select Committee on National Expenditure, 1940–1, 17, §§ 30 *et seq.*
37. Sir Lynden Macassey, Director of Shipyard Labour, *Labour Policy—False and True*, p. 212.
38. Sir Oliver Franks, *Central Control in War and Peace*, 1947, p. 48; cf. also Ministry of Labour, *The Problem of Absenteeism*, P.L.106/1942.
39. Winner of competition for best essay on Incentives, *Vauxhall Mirror*, 20th March, 1947.

40. Cotton Working Party, 1946, p. 186.

41. Select Committee on National Expenditure, 1941–2, 17.

42. E.g. letter in *The Times*, 4th March, 1946.

43. P. Drucker, *Harper's*, Dec. 1946.

44. Lord McGowan, speech at Liverpool as reported in *The Times*, 1st August, 1946.

45. Dr. Northcott, *op. cit.*, p. 271. G. S. Walpole, *op. cit.*, p. 24.

46. Linoleum Working Party, 1947, p. 13.

47. Industrial Welfare Society, Survey, 1943.

48. Watson and Price, letter in *The Times*, 18th Oct., 1946.

49. F. J. Burns-Morton, *The New Foremanship*, 1945, p. 142; C. H. Northcott, *op. cit.*, 1945, pp. 181, 262.

50. Working Party on Pottery, Report 1946, p. 19.

51. G. S. Walpole, *op. cit.*, p. 24.

52. Victor Collins, M.P., letter in *The Times*, 15th Jan., 1947.

53. Industrial Relations Service, *Joint Responsibility in Industry*, Sept. 1946, foreword and p. 3.

54. Rowntree, *Observer*, 2nd Sept., 1945.

VIII. THE CURSE OF UNIFORMITY

1. Letter in *The Times*, 14th June, 1947.

2. Letter in *The Times*, 29th Aug., 1947.

3. Working Parties on Heavy Clothing and Furniture; Reaveley and Winnington, *Democracy in Industry*, 1947.

4. Working Parties on Cutlery, p. 28, and Light Clothing, p. 32.

5. Wool Working Party, 1947, p. 57.

6. Furniture Working Party, 1947, p. 97.

7. H.M. Chief Inspector of Factories—Annual Report, 1943.

8. *Ibid.*, 1941.

9. *Industrial Administration*, Feb. 1944; *Labour Management*, Dec. 1945–6; Select Committee on National Expenditure, 1941–2, 11, § 44.

10. Mass-Observation, *People in Production*, p. 362. Select Committee on National Expenditure, 1942–3, 3, § 40.

11. Mass-Observation, *op. cit.*, p. 356.

12. C. H. Northcott, *Personnel Management*, 1945, preface; cf. also Working Party on Furniture, p. 98. Letter in *The Times*, 9th April, 1947.

13. Sir Wilfred Garrett, address at Conference of Industrial Welfare Society, Jan. 1946.

14. Correspondence in *The Times*, 6th and 17th June, 1947.

15. *The Times*, 24th April, 1947.

16. Cf., e.g., Regulation issued by Catering Wages Commission, June 1948.

17. *News Chronicle*, 29th April, 1947; cf. also *The Times*, 23rd June, 1947.

18. A.E.U., Second Report on Production, 1942. Letter in *The Times*, 24th Feb., 1947.
19. Cf. *The Times*, "Obstacles to output: an inquiry in West Midlands and Lancashire", 10th May, 1947.
20. Letter in *The Times*, 14th June, 1947.
21. I.L.O., *British Joint Production Machinery*, 1944, pp. 88–9.
22. *The Times*, 29th Nov., 1947.
23. Cf., e.g., Rubber Garment and Cutlery Working Parties; cf. also C. A. Lidbury, letter in *The Times*.
24. *Statement on Personal Incomes*, April 1948.
25. Director, Cotton Spinners' and Manufacturers' Association, letter in *Economist*, 1st Feb., 1947.
26. Minister of Fuel and Power, *Parliamentary Debates*, House of Commons, vol. 390, No. 79, 23rd June, 1943.
27. Select Committee on National Expenditure, 1941–2, 17, §§ 19–20.
28. I.L.O., *op. cit.*, pp. 182.
29. E.g. Cotton, *Labour Management*, Oct.–Nov. 1945, and Hosiery Working Party Report, 1947, p. 135.
30. Industrial Relations Service, *Joint Responsibility in Industry*, 1946, p. 4.
31. Cf., e.g., Ian Mikardo, *Labour Programme for* 1950, 1948.
32. Cotton Manufacturing Commission, Interim Report, 1948.
33. Cf., e.g., National Union of Mineworkers, Annual Report, 1948.
34. C. A. Lidbury, *Industrial Law Review*, Feb. 1947.

IX. SCOPE FOR MANAGEMENT

1. I.H.R.B., *Industrial Health in War*, 1940.
2. H.M. Chief Inspector of Factories, Annual Report, 1943.
3. Select Committee on National Expenditure, 1940–1, 17, § 26.
4. F. G. Woollard, President, Institution of Automobile Engineers, *Sunday Times*, 9th Nov., 1947; cf. also letter in *The Times*, 10th Oct., 1947.
5. I.H.R.B., *Hours of Work, Lost Time, and Labour Wastage*, 1942, p. 2: Ministry of Labour, P.L.106/1942.
6. Mass-Observation, *People in Production*, 1942, p. 234.
7. Select Committee on National Expenditure, 1941–2, 11, § 45.
8. Mass-Observation, *op. cit.*, p. 251.
9. Dr. May Smith, *Occupational Psychology*, 4 Oct., 1944, xviii.
10. Working Party on Boots and Shoes, Report, 1947, pp. 164–5.
11. I.H.R.B., Annual Report, 1926, p. 19.
12. Select Committee on National Expenditure, 1942–3, 3, § 32.
13. Ministry of Munitions, *Official History of the Scottish Filling Factory*, 4, 1919.
14. Select Committee on National Expenditure, 1942–3, 3, § 9; cf also § 39.
15. Select Committee on National Expenditure, 1942–3, 2.
16. H.M. Chief Inspector of Factories, Annual Report, 1939.

17. I.H.R.B., Emergency Report, 1940.

18. Urwick and Brech, *The Making of Scientific Management*, I.

19. H.M. Chief Inspector of Factories, Annual Report, 1940, p. 3; cf. also Annual Meeting of Production Engineers, 1941, Report.

20. Select Committee on National Expenditure, 1942–3, 3, § 28.

21. Chief Medical Statistician, General Registrar's Office, *Monthly Bulletin of Ministry of Health*, Jan. 1947.

22. Working Party on Jewellery Industry, Report, 1947, p. 51.

23. Working Party on Hosiery Industry, Report, 1946, p. 148.

24. Platt Report, 1942, p. 42.

25. H.M. Chief Inspector of Factories, Annual Report, 1941.

26. Samuel Courtauld, address at Half-Day Conference of Institute of Labour Management, 3rd Oct., 1942.

27. Pearl H. M. King, *Human Relations*, I, i, p. 130.

28. I.H.R.B., Annual Report, 1931, p. 75.

29. *Ibid.*, 1926, p. 19; and 1924.

30. I.L.O., *British Joint Production Machinery*, 1942.

31. Sir Stafford Cripps, address at Institute of Industrial Administration, 24th Jan., 1945, and at opening of Short Residential Course for Personnel Officers at University College, Nottingham, April 1945.

32. *Labour Management*, May 1941, Feb.–March 1943.

33. I.H.R.B.—Annual Report, 1926, p. 19; Urwick and Brech, *op. cit.*, ii, p. 186.

34. Mass-Observation, *op. cit.*, 1942, p. 73.

35. Sir P. Malcolm Steward, letter in *The Times*, 29th Nov., 1947.

36. Select Committee on Estimates, 1946–7, 3, § 93.

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